



California State Rail Plan 2003-04 to 2013-14

December 2004 California Department of Transportation

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December 17, 2004

Members, California Legislature
State Capitol
Sacramento, CA 95814

Dear Members:

I am pleased to submit to you the California Department of Transportation's (Department) *California State Rail Plan 2003-04 to 2013-14 (Plan)*. The Department has prepared the Plan as an examination of intercity passenger rail and freight rail transportation in California in accordance with Section 14036 of the Government Code.

The passenger element of the Plan reviews the current operations of the three State-supported intercity rail passenger routes (Pacific Surfliner, San Joaquin, and Capitol) and outlines ten-year plans for capital improvements and service expansions. This element also addresses the Department's vision for intercity rail and its standards for achievement of ten-year goals and discusses potential new routes including high-speed rail.

The freight element of the Plan is an overview of the State freight rail system, looking at commodities and volumes of goods moving in and out of the State. This element also looks at freight issues like capacity concerns, intermodal traffic, passenger and freight trains sharing right-of-way, short line railroad issues, funding programs, environmental issues, new technology, and future needs and objectives.

Draft copies of the Plan were reviewed by each regional rail corridor advisory group or authority. The Plan was presented to the California Transportation Commission (CTC) for advice and consent in April 2004. At that time, the CTC requested that certain changes be made either to the Final Plan or to the next update of the Plan. The Department then made all of the text changes the CTC recommended. The new graphs and charts the CTC recommended will be included in the next version of the Plan. Enclosed are the CTC's transmittal letter and advice and consent resolution.

Sincerely,

A handwritten signature in black ink that reads "Will Kempton".

WILL KEMPTON
Director

Enclosures

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CALIFORNIA TRANSPORTATION COMMISSION

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April 8, 2004

Honorable Kevin Murray, Chairman
Senate Transportation Committee
State Capitol, Room 2209
Sacramento, CA 95814

Honorable Jenny Oropeza, Chair
Assembly Transportation Committee
1020 N Street, #112
Sacramento, CA 95814

Dear Senator Murray,
Assemblymember Oropeza:

On behalf of the California Transportation Commission, I am transmitting to the Legislature the 10-year California State Rail Plan for FY 2003-04 through FY 2013-14 by the Department of Transportation (Caltrans) with the Commission's resolution (#G-04-03) giving advice and consent, as required by Section 14036 of the Government Code.

The ten-year plan provides Caltrans' vision for intercity rail service. Caltrans' 10-year plan goals are to provide intercity rail as an alternative mode of transportation, promote congestion relief, improve air quality, better fuel efficiency, and improved land use practices. This year's Plan includes: standards for meeting those goals; sets priorities for increased revenues, increased capacity, reduced running times; and cost effectiveness. The plan describes California's intercity rail network and connecting bus service. The plan also presents Caltrans' ten-year recommendations regarding the level of state-supported service on specific routes, as well as the capital and operational funding required for supporting such service. The report also discusses rail planning and marketing, programming, funding processes for operations and capital improvements, freight rail, and potential new service and routes.

In reviewing Caltrans' draft 2004 ten-year report, the Commission at its April 2004 meeting advised Caltrans, which Caltrans agreed to include in its final ten-year plan, that:

\$3.1 billion in projected federal funding represents a critical component of the estimated \$3.7 billion in proposed capital improvements over the next 10 years. The remaining \$600 million needed to fully fund the improvements is expected to come from the State Transportation Improvement Program.

April 8, 2004
Senator Murray
Assemblymember Oropeza
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Caltrans does not have a dedicated funding source for overhauling its locomotives and rail cars in the coming years as the equipment ages.

Caltrans also agreed to include in the next update of the State Rail Plan:

Charts or graphs that provide a comparison of the Department's progress in attaining its stated goals and "standards" relating to providing rail as an alternative mode of transportation, congestion relief, clean air, fuel efficiency, and improved land use.

A schedule/chart showing the number of vehicles that need to be overhauled, the projected estimated cost and when the vehicles need to be overhauled.

Charts or graphs that provide a comparison regarding the Department's progress in meeting its principal route objectives for the three intercity rail corridors, as well as reflecting changes made to the objectives.

The Commission adopted its Advice and Consent resolution (attached) at its April 2004 meeting. (Caltrans is responsible for transmitting the ten-year report, after it has prepared the report for publication.) The Commission appreciates the opportunity to give advice and consent on Caltrans' 2004 10-year California State Rail Plan. The Commission intends its advice to be constructive in producing a report that identifies current and potential future issues for the Administration and the Legislature. The Commission intends to continue, in cooperation with Caltrans and local agencies, to implement and expand intercity rail service in California.

Sincerely,



BOB BALGENORTH
Chair

Attachment

CALIFORNIA TRANSPORTATION COMMISSION
Commission Consent to the Department's
Ten-Year California State Rail Plan
Resolution G-04-03

- 1.1 WHEREAS the California Transportation Commission (Commission) is required by Government Code Section 14036 to give its advice and consent on the Department of Transportation (Department) 10-year State Rail Plan; and
- 1.2 WHEREAS the Department has prepared the 2004 California State Rail Plan for FY 2003-04 through FY 2013-14 in order to provide a comprehensive 10-year plan; and
- 1.3 WHEREAS the Commission has reviewed the California State Rail Plan at its April 2004 meeting; and
- 1.4 WHEREAS the Commission provided advice on the State Rail Plan and requested that the final ten-year plan:
- highlight the fact that federal funding from re-authorization is a critical funding component for the Department to deliver its \$3.7 billion 10-year plan, otherwise the rail program would be limited to the estimated \$600 million that is reasonably expected to be available from the State Transportation Improvement Program.
 - highlight the fact the Department does not have a dedicated funding source for overhauling its locomotives and rail cars in the coming years as the equipment ages.
- 1.5 WHEREAS the Commission also requested that the next update of the State Rail Plan includes:
- charts or graphs that provide a comparison of the Department's progress in attaining its stated goals and "standards" relating to providing rail as an alternative mode of transportation, congestion relief, clean air, fuel efficiency, and improved land use.
 - a schedule/chart showing the number of vehicles that need to be overhauled, the projected estimated cost and when the vehicles need to be overhauled.
 - charts or graphs that provide a comparison regarding the Department's progress in meeting its principal route objectives for the three intercity rail corridors, as well as reflecting changes made to the objectives.
- 1.6 WHEREAS the Department has agreed to incorporate the Commission's advice into its final ten-year report or will incorporate the Commission's advice into the next update of the ten-year report.
- 2.1 NOW THEREFORE BE IT RESOLVED that the Commission does hereby consent to the information contained in the California State Rail Plan and directs the Department to transmit to the Legislature, the Governor, and the Public Utilities Commission in connection with the 10-year State Rail Plan for FY 2003-04 through FY 2013-14.

California State Rail Plan

2003-04 to 2013-14

December 2004

California Department of Transportation
Division of Rail

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Executive Summary
California State Rail Plan
2003-04 to 2013-14



Executive Summary

PART I

Passenger Rail Element

Government Code Section 14036 requires the California Department of Transportation (the Department) to complete a 10-year State Rail Plan with both passenger and freight rail elements. The law also provides that the State Rail Plan be updated every two years. The passenger rail element of the California State Rail Plan 2003-04 to 2013-14 (the State Rail Plan) examines intercity passenger rail transportation in California. This element reviews the current operations of State-supported intercity rail passenger service and outlines plans for the period 2003-04 through 2013-14 for capital improvements and service expansions. The passenger rail element of the State Rail Plan is covered in Part I (Chapters I through VIII); the freight rail element is contained in Part II (Chapters IX through XV).

Chapter I—Introduction

THE DEPARTMENT'S VISION FOR INTERCITY RAIL

This vision includes the following elements:

- Provide relief to highway and airway congestion.
- Provide a rail transportation alternative to other travel modes.
- Improve air quality, conserve fuel, and contribute to efficient and environmentally superior land use.

The Department's goals in meeting this vision are based on projected benefits from implementing the improvements in the State Rail Plan.

- Increase the intercity rail mode share by 2 1/2 to 3 times.
- Cut annual vehicle miles traveled in the State by 493 million miles (a reduction of 228 million annual vehicle miles traveled compared with 2002).
- Continue to cause a net annual decrease in pollution from hydrocarbons and carbon monoxide in the State.
- Continue keeping emissions below State and federal maximum allowable levels for all pollutants, and pursuing funding for research and development into cleaner locomotive engines.
- Save the State a net of at least 10 million gallons of gasoline annually.

The Department has been supportive of efforts by cities and counties to promote transit-oriented development projects, which enhance community livability by providing housing options, jobs, retail and services within easy walking distance of transit stations. The Department has adopted the goal of continuing to support local and regional efforts to promote transit-oriented development.

STRATEGIC PLANNING

Amtrak's California Passenger Rail System 20-Year Improvement Plan (the Amtrak Plan issued in March 2001) created Amtrak's blueprint for a comprehensive passenger rail system in California. The Amtrak Plan was developed with the involvement of four task forces, one for each intercity corridor operating exclusively in California, including the Pacific Surfliners, San Joaquins, Capitol Corridor and the proposed Coast Route.

In June 2004, Amtrak release its Amtrak Strategic Plan FY 2005-09, which aims to restore Amtrak's physical plant and train equipment to a state-of-good-repair and improve the railroad's operational reliability. The plan calls for federal funds averaging about \$1.6 billion per year.

The Plan includes an appendix called the State Corridor Initiatives that identifies eight "Tier I" corridors ready for federal investment. All three California intercity rail corridors are identified as "Tier I."

INTERREGIONAL STRATEGIC PLANNING

The Department's Interregional Transportation Strategic Plan (ITSP) is the strategic planning document for interregional capital projects, and is the framework for implementing the Department's interregional transportation funding program. It relies heavily upon the State Rail Plan for its intercity rail portion.

Chapter II—The California Rail Network

THE STATE'S ROLE IN RAIL PASSENGER SERVICE

The State supports three intercity rail routes: the Pacific Surfliner operating between San Diego and San Luis Obispo, the San Joaquin between Bay Area/Sacramento and Bakersfield, and the Capitol Corridor between San Jose and Auburn. Intercity services are components of the State's overall transportation system. Services intended to meet primarily local needs are developed as commuter and urban rail services rather than intercity. In California, Amtrak currently operates all State-supported intercity rail service under the provisions of the Federal Rail Passenger Service Act (49 U.S.C. 24101).



RELATIONSHIP TO FREIGHT RAIL SERVICES

Most rail lines in California are owned and operated by private freight railroad companies, such as the Burlington Northern and Santa Fe (BNSF) and Union Pacific (UP). Upon request of Amtrak (for intercity rail passenger service) and local or regional entities (for commuter rail passenger service), these freight railroads enter into contracts for operation of rail passenger services on their lines. They are compensated by Amtrak and other public entities under the provisions of the applicable operating contracts.

Chapter III—Funding and Capital Program

FUNDING

Public Transportation Account (PTA). The PTA is the exclusive source of intercity rail operating funds and a potential source of intercity rail capital funds. The 2001-02 Budget included \$91 million for track improvements on all three state-supported routes.

State Highway Account (SHA). The bulk of the SHA supports the State's highway system, but a portion of the account also supports rail projects in the STIP. In the 1996 STIP, 1998 STIP, 1998 STIP Augmentation, 2000 STIP, and 2002 STIP \$468.6 million was programmed for intercity rail projects. Intercity rail projects can be programmed in both the Interregional Transportation Improvement Program (ITIP) and the Regional Transportation Improvement Program (RTIP).

Traffic Congestion Relief Fund (TCRF). Chapter 91, Statutes of 2000 (AB 2928 - Torlakson), established the Traffic Congestion Relief Program (TCRP) to be funded from the TCRF. The TCRP included \$206.5 million for specific intercity rail capital projects, of which \$42.6 million has been allocated.

State Bond Funds. In 1990 the voters approved the Passenger Rail and Clean Air Bond Act (Proposition 108), which provided \$1 billion in rail bonds, including \$225 million for intercity rail capital projects. The Clean Air and Transportation Improvement Act of 1990 (Proposition 116) provided a \$1.99 billion one-time source of funding for rail and transit projects, including about \$382 million for intercity rail passenger capital projects. Most of these bond funds have been allocated.

State General Funds. The 1999-00 and 2000-01 State Budgets provided General Fund money for intercity rail capital projects. The 1999-00 and 2000-01 Budgets included \$175 million and \$30 million respectively for new intercity rail rolling stock.

Tribal Compact Bonds. Chapter 91, Statutes of 2004 (AB 687—Núñez) authorized the issuance of bonds secured by Indian gaming revenue. Although the revenue is uncertain, the PTA could receive \$275 million and the SHA \$457 million.

Local Funds. Although intercity rail passenger services are funded primarily by the State, a substantial amount of local funds have also been invested, mainly on the Pacific Surfliner Route, to fund commuter rail development. Further, intercity rail stations are often owned by cities and funded with local funds in addition to STIP funding.



Federal Funds. Federal transportation funds from various programs benefit intercity rail service, particularly through station projects. However, federal flexible transportation funds, like those provided through the Surface Transportation Program, are generally not available for intercity rail projects.

Amtrak Funds. Amtrak develops and funds certain California intercity rail capital projects. The largest investment has been for maintenance facilities and rolling stock, including the purchase of 40 new passenger cars and 14 locomotives for the Pacific Surfliner Corridor at a cost of about \$135 million.

Railroad Funds. The State and the railroads owning the right-of-way of intercity rail passenger routes sometimes share in the cost of track and signal improvement projects.

INTERCITY RAIL CAPITAL PROGRAM

To date, over \$2.8 billion has been either invested or reserved for capital funding for intercity rail passenger service in California. Nonetheless, rail equipment still does not have an ongoing funding source because restrictions under Article XIX of the State Constitution do not allow rail equipment to be funded from SHA funds. Although the State has provided about 63 percent of the total investment, local entities, the federal government, Amtrak, and the private railroads have made major contributions.

The Department concurs with the “Immediate” and “Near-term” (up to eight years) capital increments of the Amtrak 20-year Plan. The Department’s unconstrained 10-year capital program uses the “Immediate” and “Near-term” increments of the Amtrak Plan as input.

Full implementation of the \$3.7 billion capital program for service expansions and new routes would require major federal funding. If such funding were available, implementation of this capital program would be delayed to reflect the level of funding made available from future STIP programming cycles, as supplemented by other funding.

The Department also has a constrained \$595 million 10-year capital program. The program includes \$60 million per year in STIP funds.



The Department's priorities for implementing capital projects in the State Rail Plan are:

- Increase the cost-effectiveness of State-supported intercity rail.
- Increase capacity on existing routes.
- Reduce train running times to attract riders and to provide an efficient service.
- Improve the safety of State-supported intercity rail service, including grade crossing improvements and closures.
- Initiate new cost-effective routes.

Chapter IV—Operations and Marketing Programs

AMTRAK

The Federal Rail Passenger Service Act authorizes Amtrak to operate intercity rail passenger service beyond its basic system services when requested to do so by a state, group of states, or a regional or local agency.

The Department provides operating funding for three intercity rail passenger services - the Pacific Surfliners, San Joaquins and the Capitol Corridor, all located exclusively within California. Amtrak operates these services under the provisions of Section 24101(c)(2) of the Act. The Department directly administers the Pacific Surfliners and San Joaquins. Since July 1998, the Capitol Corridor Joint Powers Authority (CCJPA) has administered the Capitol Corridor service under an interagency transfer agreement with the State.

California Issues in Debate on Amtrak's Future

The Department is closely monitoring the Federal debate on the future of Amtrak. There are a number of key actions that need to be taken to ensure that intercity passenger rail service can continue to successfully operate in California in the event Amtrak is restructured or liquidated.

California has made a significant capital and operating investment in its intercity passenger rail system. This investment must not be jeopardized as changes are considered to Amtrak's structure. If a competitive structure is introduced to Amtrak, the current law must be changed to allow states, and by extension their franchisees, to access freight railroads at incremental cost.

A dedicated and reliable source of federal funding for both capital and operating needs is necessary to allow the incremental development of high speed rail service on key corridor routes. Finally, the impact on corridor routes in California if long distance routes are discontinued needs to be considered.

The Department has initiated a cost/benefit feasibility study on competitively bidding intercity rail, in order to determine if there are methods whereby competitive bidding could benefit California under current law.

FUNDING FOR INTERCITY RAIL SERVICE OPERATIONS

The 10-year intercity rail ridership and financial projections shown in Figures 4A, 4B and 4C (see Chapter IV) were produced by the Department in conjunction with Amtrak for both current service levels on existing routes and for the increased service levels identified by the Department on these routes. The start-up date projections for the operating program are for planning purposes only. These projections were developed based on projected service needs. However, the implementation of all new service is subject to demonstrated ridership demand, approval from Amtrak and the relevant railroad(s), availability of operating and capital funding and equipment, and completion of necessary capital projects.

SHORT-TERM OPERATING STRATEGIES

The focus of the Department's short-term operating strategies is to improve customer service and amenities and to increase the cost-effectiveness of the services. These two strategies are directly interrelated, as an improvement in customer satisfaction should increase ridership and revenue. The Department and the CCJPA are working with the railroads and Amtrak to improve train schedules, on-time performance, bus-train connections and destinations, and passenger amenities.

SERVICE EVALUATION STANDARDS AND GOALS

The Department's goal is to provide cost-effective services that will achieve at least 50 percent coverage of costs from the farebox. The Department's standards for adding or removing services are:

- Where the cost-effectiveness of an existing service will be improved by adding or removing frequencies or route segments.
- Where the cost-effectiveness of the State-supported services as a whole will be improved.
- Where the Department has already paid for capacity increases and where others agree to fund capital and/or operating needs.

On all three routes, the goal is frequent service (up to hourly as demand requires) during business hours, and adequate coverage for leisure travelers during evenings and weekends. For service reliability, the goal is 90 percent on-time performance.

New routes are proposed for intercity markets that have identified demand and support from local entities for rail passenger service. All proposed new routes would utilize existing rail lines that in almost all cases currently have freight traffic and in some cases have Amtrak service.





MARKETING PROGRAM

As service improvements, such as increased frequencies and reduced running times, are implemented by the Department's ongoing capital improvement program, the long-term marketing strategy will focus on these improvements and the new markets they create. The Department's ability to market service improvements that make the train more competitive with the automobile will result in significant ridership and revenue gains. The Department's public relations activities include special promotions, media relations, printed materials and special events. The Department produces informational materials designed to inform customers about routes, schedules, fares, connecting buses and other Amtrak services. Passenger information services include printed materials, signage, an internet web site and telephone information. In addition, the Department, CCJPA, the Southern California Regional Rail Authority (Metrolink) and Amtrak are working together to develop real-time information displays at selected stations.

Chapter V—Pacific Surfliner Corridor

SAN LUIS OBISPO-SANTA BARBARA-LOS ANGELES-SAN DIEGO

Principal 2003/04 to 2013/14 Route Objectives:

- Increase annual ridership 49 percent, from 2,345,000 to 3,503,000 passengers.
- Increase annual revenues 79 percent, from \$24.3 to \$43.6 million, for the State-supported 70 percent of the route operation.
- Increase revenue/cost (farebox) ratio from 53.6 percent to 61.2 percent.
- Increase frequency of daily round-trip service, from 11 to 16 trains between Los Angeles and San Diego, from 5 to 6 between Los Angeles and Santa Barbara/Goleta, and from 2 to 3 beyond Goleta to San Luis Obispo.
- Reduce train-running times to less than two hours between Los Angeles and San Diego, two hours between Los Angeles and Santa Barbara/Goleta and two hours between Santa Barbara and San Luis Obispo.
- Improve the reliability (on-time performance) of trains.

- Provide real-time information to passengers on train status (e.g., anticipated arrival time), particularly at unstaffed stations.

Performance - In FFY 2003/04, ridership for all trains was 2,345,000 and the farebox ratio for State-supported trains was 53.6 percent. On-time performance of the Pacific Surfliner has averaged 86.9 percent.

Potential Train Service Improvements - The Department, in conjunction with Amtrak, anticipates there will be eventual demand for fourteen round-trips on the Pacific Surfliners between San Diego and Los Angeles.

It is important to note that the start-up dates for new service are based on projected service needs. Demonstrated ridership demand, approval from Amtrak and the relevant railroad(s), availability of funding and equipment, and completion of necessary capital projects will affect when each of the service improvements can be implemented.

The Department's proposed expansion of the Pacific Surfliner Route is as follows:

- 2007-08** Los Angeles - San Diego, twelfth round-trip.
- 2010-11** Los Angeles - San Diego, thirteenth round-trip.
- 2012-13** Los Angeles - Goleta, sixth round trip.
Goleta - San Luis Obispo, third round trip.
- 2013-14** Los Angeles - San Diego, fourteenth round-trip.

Chapter VI—San Joaquin Corridor

BAY AREA/SACRAMENTO-FRESNO-BAKERSFIELD-(L.A.)

Principal 2003/04 to 2013/14 Route Objectives:

- Increase annual ridership 46 percent, from 739,000 to 1,082,000 passengers.
- Increase annual revenues 55 percent, from \$21.9 to \$33.9 million.
- Increase frequency of daily round-trip service from 4 to 5 between Oakland and Bakersfield and from 2 to 3 between Sacramento and Bakersfield.
- Reduce train running times to five and a half hours between Oakland and Bakersfield and four hours forty minutes between Sacramento and Bakersfield.
- Improve the reliability (on-time performance) of trains.

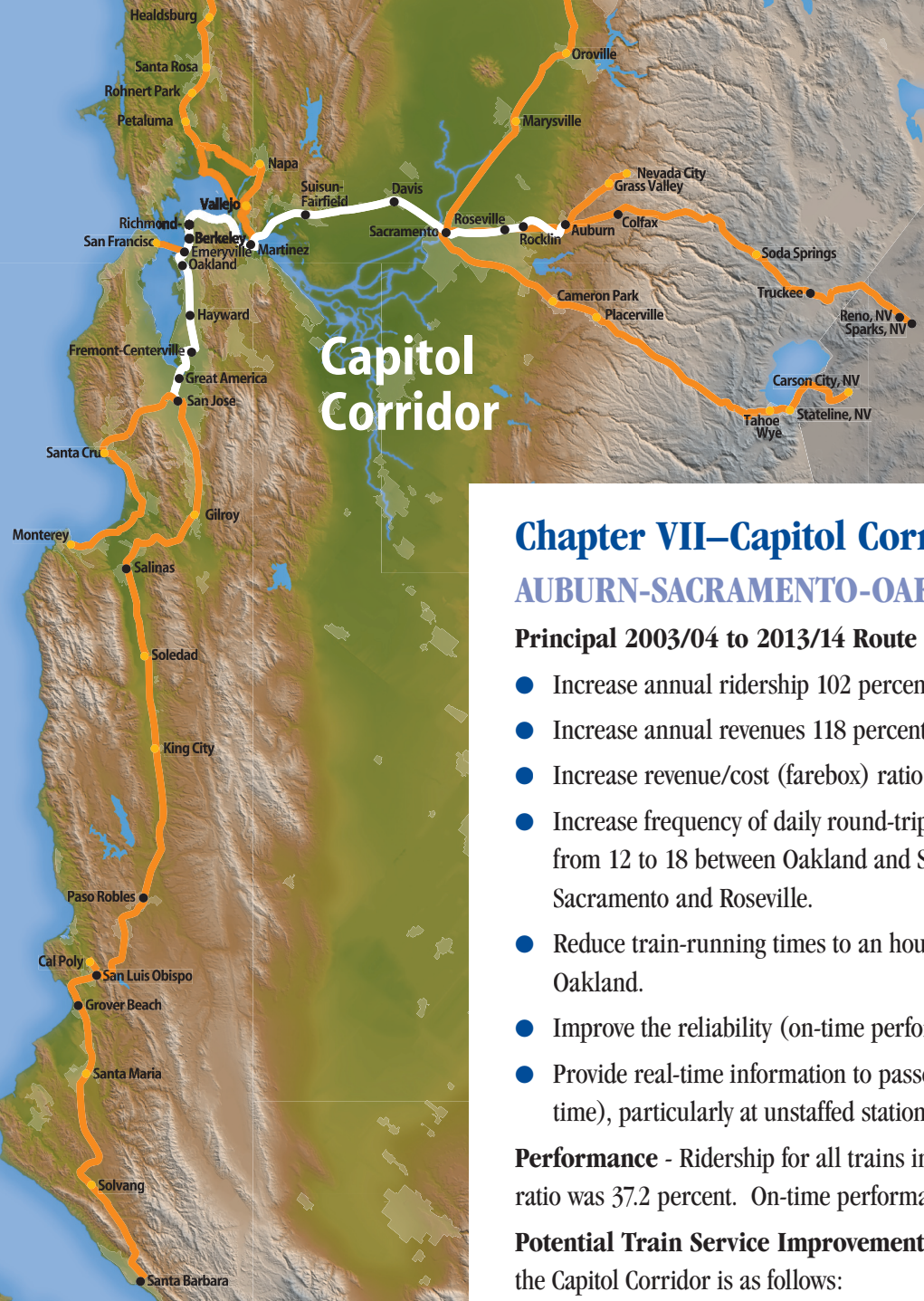
Performance - Ridership for all trains in FFY 2003/04 was 739,000 and the farebox ratio was 43.8 percent. On-time performance averaged 56.1 percent.

Potential Train Service Improvements

The Department, in conjunction with Amtrak, anticipates there will be eventual demand for eight round trips on the San Joaquins. The Department's proposed expansion of the San Joaquin Route is as follows:

- 2010-11** Bakersfield – Sacramento, third round trip to extend from Stockton to Sacramento (seventh round-trip on route).
- 2012-13** Bakersfield – Oakland, fifth round trip to extend from Stockton to Oakland (eighth round-trip on route).





Chapter VII—Capitol Corridor

AUBURN-SACRAMENTO-OAKLAND-SAN JOSE

Principal 2003/04 to 2013/14 Route Objectives:

- Increase annual ridership 102 percent, from 1,165,000 to 2,352,000 passengers.
- Increase annual revenues 118 percent, from \$13.4 to \$29.2 million.
- Increase revenue/cost (farebox) ratio from 37.2 percent to 46.9 percent.
- Increase frequency of daily round-trips from 4 to 9 between San Jose and Oakland, from 12 to 18 between Oakland and Sacramento, and from 1 to 8 between Sacramento and Roseville.
- Reduce train-running times to an hour and a half between Sacramento and Oakland.
- Improve the reliability (on-time performance) of trains.
- Provide real-time information to passengers on train status (e.g., anticipated arrival time), particularly at unstaffed stations.

Performance - Ridership for all trains in FFY 2003-04 was 1,165,300 and the farebox ratio was 37.2 percent. On-time performance averaged 85.6 percent.

Potential Train Service Improvements - The Department's proposed expansion of the Capitol Corridor is as follows:

- 2005-06** San Jose - Oakland, fifth, sixth and seventh round-trips.
Sacramento - Roseville, second, third and fourth round-trips.
Roseville - Auburn, second and third round-trips.
- 2006-07** Oakland - Sacramento, thirteenth and fourteenth round-trips.
- 2007-08** Oakland - Sacramento, fifteenth and sixteenth round-trips
- 2012-13** San Jose - Oakland, eighth and ninth round-trips.
Oakland - Sacramento, seventeenth and eighteenth round-trips
Sacramento - Roseville, fifth and sixth round-trips.
Roseville - Auburn, fourth round-trip.
- 2013-14** Sacramento - Roseville, seventh and eighth round-trips.

The CCJPA assumed responsibility for management of this service on July 1, 1998, and has proposed an enhanced level of service between certain points for the 10-year period of the State Rail Plan. The CCJPA proposal includes 18 round-trips between Sacramento and Oakland and 16 round trips between Oakland and San Jose within 10 years, with 10 round-trips extending to Roseville and 4 to Auburn.

Chapter VIII—Potential New Services

HIGH-SPEED RAIL

California High Speed Rail Authority

In 1996, the California High-Speed Rail Act founded the California High-Speed Rail Authority (CHSRA) to direct the development and implementation of intercity high-speed rail service. The CHSRA's June 2000 business plan, *Building a High-Speed Train System for California*, found that a high-speed train system is a smart investment in mobility, an evolutionary step for transportation, and a project in keeping with California's standards for environmental quality and economic growth.

The CHSRA determined that the next step in the development of the project was to proceed to develop a program environmental impact report and environmental impact statement (EIR/EIS). The draft EIR/EIS was released on January 27, 2004 and the public comment period concluded August 31, 2004. Based on this analysis, the CHSRA identified the high-speed train system as the preferred alternative to meet California's future intercity travel demand (as opposed to no project or the modal alternative project).

Southern California Maglev Project

The initial corridor study area of the California Maglev Project extends from Los Angeles International Airport (LAX) to Union Station in downtown Los Angeles and further east to Ontario International Airport and on to March Field in Riverside County, a distance of approximately 85 miles. The Southern California Association of Governments (SCAG) is the project sponsor. Additional feasibility studies are focusing on other heavily congested corridors in the SCAG region.

Las Vegas—Anaheim Maglev Project

The California-Nevada Super Speed Train Commission (CNSSTC) was formed in 1988 to promote the development of a 269-mile mag-lev system connecting Las Vegas with Anaheim, and has completed several feasibility studies on this project. With Federal funding, Nevada is undertaking environmental studies of this proposed maglev route.





PROPOSED INTERCITY RAIL ROUTES

The Department proposes five new routes:

- **San Francisco to San Luis Obispo (and Los Angeles) via Coast Route.** The Department's 10-year operating plan includes one round-trip train between San Francisco and Los Angeles, starting in 2006-07. The Department projects adding a second train in 2012-13.
- **Sacramento to Reno.** The Department is proposing to extend one round-trip of the Capitol Corridor from Sacramento to Reno/Sparks in 2007-08, and a second round-trip in 2009-10. This service would require an appropriate level of financial participation from the State of Nevada (and potentially from Nevada business interests).
- **San Francisco to Monterey.** The Department's 10-year operating plan includes two weekday round-trips (and three weekend round-trips) to start in 2008-09.
- **Los Angeles to Coachella Valley.** The Department is proposing to start one round-trip in 2008-09 and a second round-trip in 2012-13. The service would run from Los Angeles to Palm Springs, Palm Desert and Indio in the Coachella Valley.
- **Sacramento to Redding.** The Department is proposing to start one daily round-trip between Sacramento and Redding in 2009-10, with a second round-trip starting in 2012-13.



PART II

Freight Rail Element

Chapter IX—Introduction

The freight rail element of the State Rail Plan provides a detailed account of California's freight rail system, how it operates and serves the people living in the Golden State. This document was developed as part of the State's overall planning process to provide information to transportation officials, policy makers, railroad managers, and transportation planners. The freight rail element begins with an overview of the State's rail system. It discusses the routes operated by the Union Pacific and Burlington Northern and Santa Fe Railroads. The plan looks at the one regional railroad and 29 short line railroads operating on 23 percent of California's rail mileage. It points out the important role they play in moving international freight to and from California's seaports. The plan also discusses the various types of commodities shipped by rail in and out of California.

Chapter X—Major Freight Issues

Several freight issues are discussed that impact the railroad's ability to move freight efficiently. Areas include: mainline choke points caused by geographic restrictions and mainline congestion caused by the tremendous growth in intermodal traffic and the sharp increase in the number of passenger trains operating on freight railroads. Port projects in Southern California show a doubling of international container shipments from 10 to 20 million by 2020. Capacity issues are a growing concern among California's railroads and rail shippers.

Short line railroad issues include the industry's movement to heavier rail cars to try to keep transportation costs down and take advantage of the economies of scale. The problem is most short line railroads do not have the infrastructure to accommodate these heavier 286,000-pound rail cars. Short line railroads operate on a very tight budget and do not have the revenue base to make these major capital improvements. Without some kind of financial assistance to make these capital improvements, these shipments will have to be moved by truck at a greater cost to the shipper and an increase in highway maintenance and congestion cost to the State.

Rail shipper concerns are also discussed. Their issues include: congestion at intermodal terminals, lack of equipment, lost rail cars, delays to rail shipments to due increased passenger trains and grade crossing accidents.

Chapter XI—Short Line Analysis

Short line railroads play an important role in California's overall transportation system, especially for rural communities not served by Class I railroads. There are 29 short





line railroads operating on 1,813 miles or 25 percent of the State's rail mileage. The results of a survey of California's short line railroads are included in this section. Key issues of concern include: the inability to upgrade their infrastructure to accommodate 286,000-pound rail cars on their lightweight track and bridge infrastructure, the need for improved grade crossing protection devices, and the need for the State to take a more active role in preserving rail service to rural areas of California.

Commodities shipped by short lines are identified in the plan with wood products making up the largest proportion at 24 percent followed by food products at 22 percent. The project team estimated upgrade costs for all California short lines using a methodology developed specifically to handle 286,000-pound cars. The total statewide short line upgrade cost is on the order of \$290 million. Potential impacts to highway congestion and maintenance costs due to railroad closures are also discussed.

Chapter XII—Funding

In 1999, California short line railroads handled over 750,000 carloads of international freight. Many California short lines serve industries along the I-5, I-10, I-40 and I-80 corridors. They also provide switching services to the Ports of Los Angeles, Long Beach, Oakland, Hueneme, and Stockton.

Short line railroads also provide services to business in the rural portions of California who would otherwise have to rely strictly on trucks to move their freight.

The American Association of State Highway and Transportation Officials (AASHTO) estimates that the 10-year infrastructure needs for American short lines total between \$8 and \$12 billion, of which 19 to 23 percent can be funded by the railroads themselves. Federal rail funding programs are discussed including: Local Freight Rail Assistance (LFRA), Light Density Line (LDL), Rail Rehabilitation and Improvement and Financing (RRIF), Congestion Mitigation and Air Quality Improvement (CMAQ), National Coordinated Planning and Development (NCPD), Coordinated Border Infrastructure (CBI), Transportation and Community System Preservation (TCSP), Highway Rail Crossing (Section 130) and the Transportation Infrastructure Finance Assistance (TIFIA) programs.

State funding programs for railroads are examined noting that when the LDL program was not funded under TEA 21, thirty other states began or continued to provide state funds for loan or grant programs to assist short line railroads in making infrastructure improvements. Of the \$2.1 billion made available to short line railroads during the period of 1976 to 1995, 28 percent was from federal grants, 40 percent was from state grants, 24 percent from local funds and 8 percent from state loans.

Chapter XIII—Environmental Review

Environmental issues are discussed in detail to stress the need for an integrated planning effort to better address the needs of California's transportation system. Topics include: noise impacts, vibration, at grade highway/railroad crossing incidents and locomotive emission air quality. The impacts to local communities from locomotive horn blowing at grade crossings are discussed as well as the US Environmental Protection Administration's (EPA) standards for noise emissions. The Federal Railroad Administration is charged with enforcing these noise standards.

Delays at railroad crossings and accidents due to the increase in train traffic are also discussed. The Alameda Corridor project eliminated 200 grade crossings improving safety and reducing traffic delays between Long Beach and Los Angeles. Locomotive emissions are discussed in detail noting the new EPA standards.

Chapter XIV—New Technology

Eight new technology areas are discussed:

- Global positioning system applications
- Positive train control
- Information technology applications
- Electronic commerce
- Alternating current locomotive technology
- Electronic braking
- Increased car capacity
- Rolling stock improvements

Chapter XV—Future Needs

California's rail system is rapidly running out of capacity due to a large increase in passenger train activity as well as tremendous growth in international trade moving by rail. While the needs of passenger rail operations are being addressed by the State, the landside freight transportation system is not. In order for California to remain competitive in a global economy, more funds need to be devoted to improving the State's system of highways and railroads that handle this international cargo.

The case for funding for short line railroads is a compelling one. Without outside assistance, many of the State's short line railroads will be unable to accommodate the heavier rail cars forcing more freight to move by truck and impacting the railroads ability to stay in business. The environmental, economic, safety and mobility benefits need to be considered when evaluating infrastructure projects.

PART I

PASSENGER RAIL ELEMENT

CHAPTER I

INTRODUCTION

Government Code Section 14036 requires the California Department of Transportation (the Department) to complete a 10-year State Rail Plan with both passenger rail and freight rail elements. The law also provides that the State Rail Plan be updated every two years.

The passenger rail element of the *California State Rail Plan 2003-04 to 2013-14* (the State Rail Plan) examines intercity passenger rail transportation in California and reviews the current operations of State-supported intercity rail passenger service. It also outlines 10-year plans for capital improvements and service expansions in this period. The passenger rail element is covered in Part I, Chapters I through VIII of the State Rail Plan; the freight rail element is covered in Part II, Chapters IX through XV.

This chapter provides an overview of the Department’s Division of Rail vision and the strategic planning efforts of Amtrak and the Department.

THE DEPARTMENT’S VISION FOR INTERCITY RAIL

The Department’s Intercity Rail Program Vision summarizes and guides the program’s efforts. To achieve the vision for intercity rail in California, service must be frequent and reliable, and available for trips to major intercity destinations with travel times competitive with the auto. Capital projects to increase capacity allow frequencies to be added; projects to improve on-time performance and increase reliability; and projects to reduce running time attract riders and provide an effective service.

Provide Relief to Highway and Airway Congestion – In many intercity corridors highway demand is near or has already exceeded capacity, and it is not financially or environmentally feasible to add capacity. Intercity rail currently provides congestion relief in corridors where capacity has already been exceeded, and rail service can be expanded to provide additional congestion relief. Intercity rail thus provides an alternative to building new highway capacity. Current investment in rail facilities and infrastructure will protect rail capacity so it is available in the future to provide critical relief to highway and airway systems.

Concerning the air transportation network, it is also environmentally and financially difficult to build additional airport capacity. Intercity rail provides an effective alternative to short haul air travel, such as from the Central Valley to the Bay Area and Southern California, helping to relieve congestion at airports by eliminating the need for some short distance flights.

Provide a Rail Transportation Alternative to Other Travel Modes - Rail service provides a safe, efficient and cost-effective alternative to auto, bus and air travel. There has never been a passenger fatality on State-supported Amtrak service in California. For trips between certain cities, rail provides the only alternative travel mode to the auto. Rail travel often provides the only viable mode of travel for disabled, senior and low-income travelers. Business and leisure travelers may choose rail for cost efficiency, and ease of travel. Rail can provide a cost-effective alternative to all travelers in some short haul air markets characterized by high fares, such as for air travel within the San Joaquin Valley.

Improve Air Quality, Conserve Fuel, and Contribute to Efficient and Environmentally Superior Land Use – Rail service contributes to improved air quality by reducing vehicle miles traveled and vehicle emissions; by reducing fuel consumption, and by helping to limit dependence on foreign petroleum. It also helps to reduce the need for highway construction, which often causes the loss of economically, environmentally, and historically valuable land, and can contribute to inefficient land use patterns.

STANDARDS FOR ACHIEVEMENT OF TEN-YEAR GOALS

This section of the State Rail Plan establishes standards for the achievement of the Department's 10-year goals in terms of congestion relief, travel mode alternative, air quality, energy efficiency and improved land use. Progress in meeting these goals will be measured in future plans.

CONGESTION RELIEF

Because congestion relief is difficult to quantify, a calculation of the rail share of total intercity corridor travel is used here to estimate the impact of increased rail service on congestion in each corridor. Measuring increases in mode share for rail travel is an appropriate way to estimate congestion relief because an increase in the rail mode share represents trips that would have otherwise been made on another mode, primarily by auto. Measuring changes in mode share versus simply measuring increases in ridership also has the advantage of eliminating the effect of increases in population and economic activity on rail ridership. This method shows the true effectiveness of the service in attracting riders from other modes, rather than just showing ridership resulting from an overall increase in travel across all modes.

In 2001, the Department and the National Railroad Passenger Corporation (Amtrak) conducted a comprehensive Pacific Coast Market Study. This study was a broad based random telephone survey designed to produce a profile of intercity travel behavior in the Pacific Coast Market and specifically in California. One of the key segments of the survey was the development of mode share calculations based on actual trips taken and modes used.

Based on the data from the study, the 2001 mode share for intercity rail along the Surfliner Route was 3.9 percent, slightly higher than the 3.5 percent for the Capitol Corridor and San Joaquin Route. (By comparison, air travel had a mode share of 13.9 percent along the Surfliner Route and 13.7 percent for the combined Capitol Corridor and San Joaquin Routes.) For this analysis, the corridors served by the Capitol Corridor and San Joaquins were combined because many of their population areas overlap. The analysis also excluded points served by San Joaquin Route buses south of Los Angeles. The Department and Amtrak will replicate this comprehensive market study in 2005 and 2010 and provide updates on changes in the rail mode share in future State Rail Plans.

Another Department planning tool provides an indication of the mode share change that can be expected from implementation of the 10-year program in the State Rail Plan. The Rail Ridership/Revenue Forecasting Model was used to generate the forecasts of ridership and ticket revenues that can be expected as a result of improvements proposed in the State Rail Plan (its methodology is summarized in the last section of Chapter IV). The forecasting model shows that implementing the improvements in the 10-year program of the State Rail Plan would attract enough riders to increase the rail mode share by 2½ to 3 times compared to 2001.

The Department’s first goal in meeting its vision of providing relief to highway and air congestion is to increase the intercity rail mode share by 2½ to 3 times by 2014, by implementing the improvements proposed in the State Rail Plan for the three existing State-supported routes.

In addition to calculating mode share change, the impact of intercity rail on congestion was measured by calculating the vehicle miles saved as a result of intercity rail passenger services. The first step in the calculation was estimating the vehicle (automobile) miles that would be saved by passengers using State-supported intercity rail service in 2003 and the expanded service proposed in the State Rail Plan for 2014. To determine vehicle miles saved, first the number of State-supported intercity train passenger miles for each year was estimated. Then an average vehicle occupancy rate of 1.43 passengers per automobile was applied to the passenger miles to derive vehicle miles saved in each of the two years (2003 and 2014).

The vehicle miles saved as a result of State-supported intercity rail service were 265 million miles in 2003 and 443 million miles in 2014.

The Department’s second goal in meeting its vision of providing relief to highway and air congestion is to cut annual vehicle miles traveled in the State by 443 million miles by 2014 (a reduction of 178 million annual vehicle miles traveled compared with 2003).

Please note that the studies and forecasts outlined above relate solely to intercity passenger rail service and do not include any data for commuter rail traffic or service.

TRAVEL MODE ALTERNATIVE

Already 98 percent of the State's population lives in counties served by the State-supported intercity rail and connecting bus network. The challenge is to increase the share of this population that will ride the trains and buses. As already demonstrated in California and elsewhere, people will ride intercity trains and connecting buses if they are frequent, reliable, and provide competitive travel times. In terms of train frequency, the State-supported intercity rail service will become a significantly more competitive travel mode when the 40 daily statewide round-trips proposed as 10-year goals in the State Rail Plan (14 on the Pacific Surfliner Route, 18 on the Capitol Corridor, 8 on the San Joaquin) are implemented.

As described above, these frequency increases, together with the other improvements proposed for the ten-year period through 2014, would raise the intercity rail mode share for the State-supported routes by 2½ to 3 times. The Pacific Surfliner Route would have a mode share of 10 to 12 percent, while the Capitol Corridor and San Joaquin Route would have a mode share of 9 to 10.5 percent. This 10 percent threshold approaches the 13 percent mode share for air travel in these corridors. Achieving such a mode share would demonstrate that intercity rail is providing a true alternative mode for travelers.

The Department's goal of increasing the intercity rail mode share by 2½ to 3 times by 2014 supports the vision of providing a true alternative to other travel modes.

AIR QUALITY

Four pollutants were examined in addressing air quality: hydrocarbons, carbon monoxide, nitrogen oxides (NO_x), and particulate matter less than 10 microns (PM₁₀). These were measured in grams of pollutants for each case. The pollution saved by the reductions in vehicle miles from 2003 to 2014, were compared to the increases in train pollution resulting from the increases in train miles for the same period.

The first step in the comparison is converting the vehicle (automobile) miles saved as a result of State-supported intercity rail service in 2003 and 2014 (described above under Congestion Relief) to automobile emissions. To do this, the vehicle miles saved were multiplied by the average pollutants per vehicle mile for the typical automobile in California. Next, the train miles estimated to be operated by the three State-supported services in 2003 and 2014 were calculated. The total amount of automobile pollution saved due to the new train services were then

compared directly to the additional pollutants generated by the increased train miles generated by the added train services.

The analysis showed a net annual decrease in pollution from hydrocarbons and carbon monoxide.

The Department’s first goal in meeting its vision of improving air quality is to achieve a net annual decrease in pollution from hydrocarbons and carbon monoxide in the State through 2014.

The analysis also showed a net annual increase in pollution from NO_x and PM₁₀, resulting from increased use of intercity rail in 2014 compared to 2003. The increase in pollution from NO_x and PM₁₀ is due to the fact that the diesel fuel used by the intercity rail trains produces substantially more NO_x and PM₁₀, on a per gallon basis, than gasoline. The net reduction in gasoline consumption from increased use of intercity rail does not offset the difference between diesel fuel and gasoline relative to NO_x and PM₁₀.

If the increase in intercity rail ridership by 2014 exceeds current projections, then the net decrease in hydrocarbons and carbon monoxide would be even greater, while there would be less of a net increase in NO_x and PM₁₀ emissions. This is because, as explained above, the estimate of the reduction in vehicle miles traveled is based on projected intercity rail ridership.

In addition, the U.S. Environmental Protection Agency is instituting new emissions requirements for diesel locomotives. The type of locomotive that is predominantly used in the State-supported rail system, the new F59 engines purchased by the State and Amtrak, meets the Tier 0 requirements, which went into effect in 2001. The State had ordered F59s that met this requirement before being required to do so. The next set of standards, called Tier 1, took effect on January 1, 2004. These require that passenger locomotives purchased after that date emit 25 percent less NO_x and 33 percent less particulates than previously allowed. Tier 2 standards, which will take effect on January 1, 2005, will require that passenger locomotives purchased after that date emit 35 percent less NO_x and less than half the particulates than previously allowed.

The Department’s second goal in meeting its vision of improving air quality is to continue to keep emissions below State and federal maximum allowable levels for all pollutants, and to pursue funding for research and development into cleaner locomotive engines.

ENERGY EFFICIENCY

To address energy efficiency, the energy use from the automobile trips that would be avoided due to expanded intercity rail passenger services included in the State Rail Plan were compared to the additional energy use resulting from these

expanded intercity rail passenger services. The analysis used 2003 as the base year and 2014 as the out year.

In order to convert vehicle miles to energy use, the vehicle miles saved as a result of use of the State-supported intercity rail service in 2003 and 2014 were multiplied by the average amount of energy use per vehicle mile, as expressed in British Thermal Units (BTUs), for the average automobile in California. Next, the energy use resulting from train miles to be operated by the three State-supported services in 2003 and 2014 were converted to BTUs. The total amount of automobile energy use saved due to the new train services was then compared directly to the additional energy use generated by the increased train miles operated by the added train services.

The vehicle miles saved for 2003 would have otherwise resulted in the consumption of 11.4 million gallons of gasoline. Concurrently, the train miles traveled in 2003 would result in the usage of diesel fuel equivalent to 6.7 million gallons of gasoline. The result is a net saving of 3.7 million gallons of gasoline in 2003, or over 10,000 gallons of gasoline per day.

The increase in annual vehicle miles saved in 2014, as compared to 2003, would result in saving an additional 7.9 million gallons of gasoline in 2014. Further, the additional train miles traveled in 2014, compared to 2003, would result in the usage of additional diesel fuel in 2014 equivalent to 3.1 million gallons of gasoline. The result is a net saving of 4.7 million additional gallons of gasoline in 2014, compared to 2003, or a total of 8.4 million gallons of gasoline conserved annually by 2014.

The Department's goal in order to continue to meet its vision of conserving fuel and energy is to save the State a net of at least 8 million gallons of gasoline annually by 2014.

LAND USE

The Department has been supportive of efforts by cities and counties to promote transit-oriented development projects, which enhance community livability by providing housing options, jobs, retail and services within easy walking distance of transit stations.

The Department plans to continue to support local and regional efforts to promote transit-oriented development in order to meet its vision of contributing to efficient and environmentally superior land use.

The following are a few examples of stations where transit-oriented development has recently occurred, or which are slated for transit-oriented development.

Bakersfield - The Bakersfield station opened to the public in July 2000. The station, about one mile east of the former Bakersfield Amtrak stop, is much closer to downtown in the heart of the civic center entertainment complex, which

includes the Bakersfield Convention Center and Centennial Garden Arena. While downtown is on the northwest side of the station, a new development plan calls for building an entertainment-retail complex called River Walk Plaza on 20 to 25 acres to the south of the station. Included in the proposal are an ice rink, movie theater, other recreational facilities, retail, and office space. In addition, construction is underway on 180 units of senior housing across the street from the proposed River Walk Plaza location. Two 80-unit complexes of multi-family affordable housing have also been proposed for construction in the same area in the next two to three years. Another development proposal calls for building 12,000 square feet of office space adjacent to the Amtrak parking lot to house the Convention and Visitors Bureau, which would provide a convenient stopping point for tourist information for San Joaquin passengers.

Emeryville - In 1998, construction began on the first phase of a project that will result in a three-building, 550,000 square foot mixed-use complex on the north, east and south sides of the Amtrak station. The first phase, now completed, is a 240,000 square foot, five-story office building with ground floor retail and two levels of parking below. The second phase that consists of 170,000 square feet of office space was completed in 2001. The project also includes 101 owner-occupied lofts and town homes, plus senior housing. The site was formerly industrial and had remained vacant for over 20 years before the City coordinated and facilitated toxic remediation and redevelopment of the site. The next phase will consist of 100 units of rental apartments, with at least 20 percent set aside as affordable housing. The station is served by the Capitol Corridor, San Joaquin, and the Coast Starlight and California Zephyr long-distance Amtrak trains, AC Transit buses, and the Emery Go-Round free shuttle bus that connects to the MacArthur Bay Area Rapid Transit District (BART) station and various businesses, work sites, and retail and entertainment centers.

Fresno - The historic Fresno Santa Fe Station is in the process of being renovated to include the Amtrak station on the first floor with offices and retail facilities on the second floor. It is scheduled to open in January 2005. In the surrounding area a new federal building is nearing completion. An additional multi-functional office building is also under construction. This building will house some of the Department's District Office units, the Internal Revenue Service, Employment Development offices, law offices and a variety of retail services on the ground floor. Fresno City Hall and other governmental offices are already located within walking distance to the station. There are several existing restaurants, hotels and other attractions located near the site.

The close proximity of the various business and governmental agencies makes this station a hub for locals and visitors alike.

Fullerton - Transit-oriented development projects are under construction adjacent to the station. They consist of nearly 600 residential units located at or near the

station, and also include commercial space. The station is served by the Pacific Surfliner, Southwest Chief long-distance Amtrak train, and Metrolink commuter rail.

Hanford - This Central Valley City is known for its historic downtown that dates back to the 1890s and early 1900s. The main commercial street in the historic district is 7th Street, which provides a pedestrian-friendly connection between the district and the Hanford Amtrak station. This easy pedestrian access makes taking the San Joaquin a convenient way for tourists and school field trip groups to visit historic Hanford. The City is planning to extend the pedestrian-oriented street network to encompass more of historic Hanford. Plans call for widening sidewalks, planting street trees, and installing period street lighting and other street furniture further north along 7th Street to historic China Alley. The project will effectively expand the number of destinations and attractions accessible by foot to visitors arriving by rail, thereby making the train an even more convenient option for visiting Hanford.

Los Angeles (Union Station) - This landmark station counts the highest ridership in the entire State. Over the last decade, a vibrant transit hub has evolved where passengers can transfer between State-supported Amtrak trains and buses, long-distance Amtrak trains (Coast Starlight, Southwest Chief, and Sunset Limited), regional Metrolink commuter trains, Los Angeles Metro subway and light rail lines, local and regional transit routes, downtown circulator buses, employer and hotel shuttles, airport vans and taxis. More recently, new businesses have opened to fulfill service needs brought about by significant growth in passenger activity at this station. For example, in addition to the traditional auto rental agencies that serve these travelers, “carsharing” vehicles are now available on-site by subscription on an hourly basis, thereby reducing demand for scarce parking spaces. In the early 1990s, the Los Angeles County Metropolitan Transportation Authority built its high-rise headquarters alongside a transit plaza adjacent to the eastern entrance, and the Southern California Metropolitan Water District took occupancy of another new skyscraper to the south of the station. The City has conceptually approved development of several million additional square feet of office space surrounding the station in response to private sector market needs. Currently a new mid-rise building is under construction fronting Alameda Street. This will feature primarily residential condominium-type units, plus ground floor office/retail space.

Oakland (Jack London Square) - A large, high-density housing complex was recently constructed across the railroad to the west of the station. To the north of this project, the Jack London Square area has undergone a great deal of transformation in recent years from a predominantly industrial port area to a busy retail and entertainment district. Also, major new housing and business projects are being constructed near the station to the east of the railroad. In order to accommodate increased ridership at the station, the Department and the

Capital Corridor Joint Powers Authority (CCJPA) are planning to widen the platform at the station. The station is served by the San Joaquin, Capitol Corridor, and Coast Starlight.

Oakland Coliseum (future station) - When completed in early 2005, the station will provide a direct connection by way of a raised walkway between the Capitol Corridor, the Coliseum BART station, and the planned Oakland Airport Connector train. Currently, the City is participating in a collaborative effort to develop an Area Plan and Redevelopment Strategy for the Coliseum Redevelopment Area. Due to the expected importance of this station area as a transit hub, the Area Plan and Redevelopment Strategy will explore long-range opportunities to create a Transit-Oriented District.

Richmond - A planned pedestrian-oriented transit village is under construction at this station, a transit node where passengers can transfer between BART urban rail trains and San Joaquins or the Capitol Corridor. The Richmond Transit Village will consist of 228 townhouses, 27,000 square feet of retail, and a 30,000 square foot performing and cultural arts facility. In order to accommodate increased ridership at the station, the Department and CCJPA constructed a new center boarding platform at the station with a passenger shelter, seating, and a new stairwell and elevator providing a direct connection to the BART station. During the next phase of the project, a new Amtrak station building will be constructed. It will include restroom facilities, an Amtrak passenger waiting area, and an information and directional signage kiosk with an electronic display of real-time train information.



Planned Amtrak station building at Richmond

Source: VBN Architects

San Diego - A high-density condominium project adjacent to the station is currently under construction. The station is served by the Pacific Surfliner and by Coaster commuter rail. The first tower was completed in 2004 and the initial residential units have been occupied. A second residential tower is also under construction. Also, an innovative project will be constructed that will combine art museum facilities and rail maintenance and supply storage space. Several other developments with commercial and residential units are being constructed within walking distance of the rail depot.

Simi Valley - The City of Simi Valley, in partnership with the County of Ventura, is currently developing a transit village plan (CA Gov. Code Sec. 65460 et seq) to evaluate the use of a transit-oriented development overlay zone. The zone would be used to encourage the implementation of transit village design within a quarter mile radius of the City's multi-modal transit station boundaries. Nearly 800 single-family and multi-family homes are currently under development or consideration in the proposed overlay area. The proposed transit overlay zone would include a 7-acre commercial center, a 45-acre park and community center, 40 acres of other commercial and industrial uses, 75 acres of residential property, and 20 acres of open space. The City's multi-modal transit station is currently served by Metrolink commuter rail, the Pacific Surfliner, City buses, Los Angeles County buses, San Joaquin connecting buses, local taxis and the City's extensive pedestrian/bike trail system.

AMTRAK'S CALIFORNIA PASSENGER RAIL 20-YEAR PLAN

With the publication of *Amtrak's California Passenger Rail System 20-Year Improvement Plan* (the Amtrak Plan) in 2001, Amtrak's blueprint for a comprehensive passenger rail system in California was created. The Amtrak Plan was developed with the involvement of four task forces, one for each intercity route, including the San Joaquin, Capitol Corridor, Pacific Surfliner and Coast Route. The membership in each task force included local representation, the Department, host railroads (as owners of the infrastructure), the California High-Speed Rail Authority, and the Federal Railroad Administration (FRA).

The Amtrak Plan does the following:

- Establishes goals for the state's existing and emerging rail corridors.
- Creates a comprehensive vision statement representing local, regional, and statewide consensus on rail transportation investments.
- Lists the improvements required to achieve each corridor's goals.

- Identifies and prioritizes specific improvement projects that will achieve the greatest return on investment in terms of increasing capacity, train frequency, reliability, speed, and safety. The Department has adopted the "Immediate" and "Near-term" increments of the Amtrak Plan for its 10-year capital program and cost projections.
- Optimizes the integration of all passenger rail services to ease transfers.
- Specifies the funding required at both the corridor and project level to improve infrastructure and purchase trains.
- Provides a blueprint to guide future rail planning and investment decisions in the immediate (up to 3 years), near term (4 to 8 years), and long term (9 to 20 years).

AMTRAK'S STRATEGIC BUSINESS PLAN

In June 2004, Amtrak released its Amtrak Strategic Plan FY 2005-2009, which is a strategic capital investment and operating plan that updates the plan released in 2003. Amtrak's Strategic Plan FY 2005-2009 aims to restore Amtrak's physical plant and train equipment to a state-of-good-repair and improve the railroad's operational reliability. The Plan identifies four strategies: 1) maintain the focus on stabilizing the railroad; 2) continue to ramp-up the capital program; 3) continue the emphasis on operating efficiencies through improved fleet utilization, better service design and increased productivity; and 4) encourage investment in improved service, including corridor development. The Plan is based on investments in existing infrastructure and equipment, and proposes no new significant passenger services – focusing instead on improving the reliability and cost-efficiency of the passenger railroad's existing services.

The Plan outlines the progress made in FFY 2003-04, including establishing a transparent financial reporting system, implementing zero-based budgeting, imposing strict headcount control measures, focusing on day-to-day passenger operations, and on maintenance of plant and equipment. The Plan continues these measures for the next five years. Challenges that Amtrak faced in FFY 2003-04 which are likely to continue include: 1) continuing deterioration in host railroads' capacity and infrastructure, and 2) failures and delays attributed to deferred investment in and reconstruction of Amtrak's plant and equipment.

To support the existing system, the five-year Strategic Plan calls for federal funding averaging about \$1.6 billion per year. The plan holds the line on federal support for operating purposes each year at \$570 million. The majority of federal support is for capital improvements to the existing system and to bring facilities and equipment up to a state-of-good-repair. Although the Plan is primarily directed to preserve and improve Amtrak-owned assets in the Northeast Corridor, it also includes: Phase II of the new maintenance facility in Oakland that was

completed in September 2004 and fully operational in December 2004; overhauls of Pacific Surfliner equipment; and basic repairs of Amtrak-owned equipment maintenance facilities in Los Angeles. For details of projects proposed in California, see the section in Chapter III, “Amtrak Funds.”

The Plan continues Amtrak’s policy of not starting new train services unless the state or states served pays the full operating loss. Amtrak continues to seek full state funding for incremental operating losses on existing state-supported trains. Risks to the Plan’s success include: inadequate capital funding, required lead time for staffing and ordering materials, major asset failure, further freight railroad network congestion, security incidents, and a potential economic slowdown.

Specific objectives contained in the five-year strategic plan include:

Capital Plan

Infrastructure

- Continue bringing the physical plant to state-of-good-repair
- Station improvements
- Advance infrastructure partnerships, such as the Oakland Maintenance Facility

Fleet

- Overhaul/remanufacture fleet, both passenger cars and locomotives
- Aggressively advance wreck repairs to bring equipment into service
- Retire and replace obsolete equipment
- Initiate corridor equipment acquisition with states, including California

Operating Plan

- Implement additional service, crew and equipment efficiencies
- Continue to seek labor work rule and scheduling efficiencies
- Identify additional targeted headcount reductions
- Increase operating efficiency through capital investment that will allow:
 - Scheduled maintenance to be possible
 - Improved fleet quality and fewer “bad orders”
 - Reduced risk of infrastructure failures
 - Increased ridership and revenues

CALIFORNIA CORRIDORS HIGHLIGHTED IN STATE CORRIDOR INITIATIVES

The Amtrak strategic plan also includes an Appendix called the State Corridor Initiatives that focuses on state proposals supported by Amtrak for specific passenger rail corridor development, and strategies to protect and upgrade key facilities owned by freight railroads. “States and the freight railroads face serious problems of capacity, congestion and reliability,” said Amtrak President and CEO David Gunn. “There is a growing consensus within the rail industry that we must come together to address these challenges.”

Amtrak surveyed all states and identified those corridors that complied with Amtrak’s criteria indicating a readiness to receive federal investment. The criteria includes a long-term master plan, market revenue forecast, operating expense forecast, infrastructure and equipment investment plans, host railroad acceptance, agreement to fund 20% match, and agreement to cover any added operating deficit. Amtrak worked with states to clearly identify the corridors, the congestion and capacity challenges and capital investment needs. Only eight corridors nationwide achieved the “Tier I” level of ready-to-invest, three of which are California state-supported corridors (Pacific Surfliner, San Joaquin and Capitol Corridor). The other corridors in the Tier I category included those in Washington, Oregon, Wisconsin, Illinois, North Carolina and Pennsylvania. Amtrak, in conjunction with the states, proposed a Pilot Program of matched federal funding for Tier I corridors. Should that come to fruition, California would receive over \$900 million.

One outgrowth of the Strategic Plan and the State Corridor Initiatives was a recognition that many states, as well as Amtrak, desperately need rolling stock for existing service and future expansions. States, such as California, are working to grow the rail market and build the track infrastructure to expand service and reduce trip times to meet the demand. Amtrak has joined with ten states to develop a standardized specification for single-level and multi-level passenger coaches, in the hopes of pooling funding from states and Amtrak to share expertise and staff resources, create a national standardized pool of intercity rolling stock and to achieve efficiencies of scale inherent in larger procurements. California (both the Department and CCJPA) is participating in this effort.

INTERREGIONAL STRATEGIC PLANNING

The Department's Interregional Transportation Strategic Plan (ITSP) is the strategic planning document for interregional capital projects and the framework for implementing the Department's interregional transportation funding program. The ITSP addresses the development of both the State highway interregional road and intercity rail systems in California; it includes strategies for other eligible fund uses such as interregional mass transit guideways and grade separations. The ITSP relies heavily upon the State Rail Plan for its intercity rail portion.

The ITSP was developed for the 1998 State Transportation Improvement Plan (STIP). It established the goals and objectives for the interregional program and identified a small subset of highways to upgrade freeway standards, ensuring interregional mobility in areas not served by the Interstates (referred to as Trunk Routes). The Department is continuing to implement the ITSP.

STATEWIDE RAIL ASSESSMENT

The Department, in consultation with the Office of Planning and Research (OPR) conducted a statewide rail transportation assessment as required by Chapter 597, Statutes of 2001 (AB 1706 - Committee on Transportation) and Chapter 127, Statutes of 2000 (AB 2866 - Migden).

The report was completed after the issuance of the 2002 State Transportation Improvement Program (STIP), as adopted by the California Transportation Commission in April 2002, and reflects the status of the project programming contained in that STIP. The report does not reflect any proposed funding or project programming changes that have occurred since that date.

Key findings are included for:

- Rail connectivity
- Track congestion
- Capital improvement plans
- The cost effectiveness of rail investments

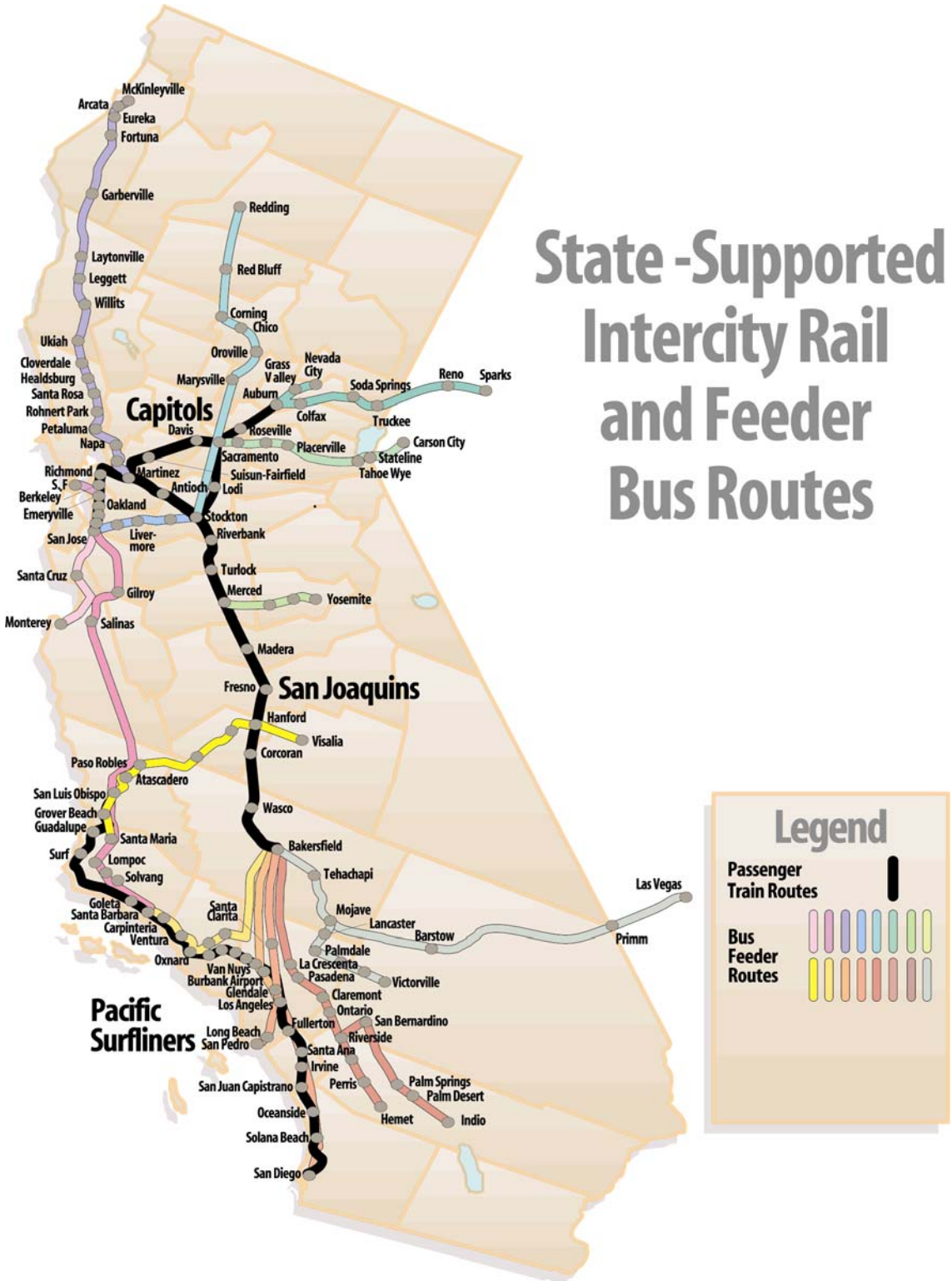
As directed by statute, recommendations are made in the following two areas:

- Improving rail connectivity
- Filling identified gaps in physical connectivity
- Performing schedule coordination improvements

- Capitalizing on recent technology advances to improve fare coordination
- Increasing connectivity information dissemination
- Providing congestion relief: identifying projects for new track, speed improvements and capacity improvements

In today's environment of a fully connected but congested highway system, multi-modal solutions are necessary to address increasing levels of traffic congestion, particularly in the metropolitan areas of the State. At the same time, passenger rail connectivity needs improvement in order to optimize the effectiveness of the rail transportation mode. The analysis has shown that rail investments are similar in cost effectiveness to highway investments, indicating their important contribution of public benefits.

Figure 2A



CHAPTER II

THE CALIFORNIA RAIL NETWORK

This chapter describes the California Rail Network and the State’s responsibility vis-à-vis this network. The chapter concentrates primarily on passenger service, since that is the subject of this element of the State Rail Plan.

A varied and extensive network of intercity, commuter and urban rail passenger services is operated in the State of California. Figure 2A is a map displaying the State-supported intercity rail and connecting bus routes. Figure 2B summarizes all of the intercity, commuter and urban rail services in California.

PASSENGER RAIL SERVICES

TYPES OF RAIL SERVICES

There are three general types of services, as follows:

- **Intercity Rail** - operates largely between several regions of the State, using the Railroad Mode (see description below). Basic system trains are funded exclusively by Amtrak. State-supported trains are funded by both the State and Amtrak. The Pacific Surfliner Route includes both State-supported service and basic system service. The Capitol Corridor is funded by the State but administered by the CCJPA.
- **Commuter Rail** - operates primarily within a single region of the State, serving regional and local transportation needs, using the railroad mode.
- **Urban Rail** - operates locally within an urban region of the State, serving local transportation needs, using the Heavy Rail, Light Rail, or Cable Car Modes (see descriptions below).

RAIL MODES

The three types of services use four modes. These modes are as follows:

- **Railroad** - Rail passenger service that uses tracks owned by a freight railroad (or purchased or leased by a public entity from such a railroad). Generally, rail freight service uses the same tracks that are also used by rail passenger service. In California, all such rail passenger service is presently diesel powered, except for certain steam-powered trains on tourist rail services. In the Northeast and Midwest some intercity and commuter rail services are electric powered. The Surface Transportation Board (STB) and the Federal Railroad Administration (FRA) both regulate this mode. The California Public Utilities Commission (CPUC) regulates railroad safety, including grade crossings.

Figure 2B

RAIL PASSENGER SERVICES IN CALIFORNIA					
Type of Service	Mode	Operator	Service Name	Service Area	
Intercity Rail	Railroad	Amtrak (State Supported)	Pacific Surfliner*	San Luis Obispo-Santa Barbara-Los Angeles-San Diego	
			San Joaquin	Bay Area/Sacramento-Fresno-Bakersfield	
			Capitol Corridor	Auburn-Sacramento-Oakland-San Jose	
		Amtrak (Basic System)	Coast Starlight	Los Angeles-Oakland-Sacramento-Seattle	
			California Zephyr	Emeryville-Sacramento-Denver-Omaha-Chicago	
			Southwest Chief	Los Angeles-Kansas City-Chicago	
			Sunset Limited	Los Angeles-Houston-New Orleans-Orlando	
			Texas Eagle	Los Angeles-Dallas/Fort Worth-St. Louis-Chicago	
Pacific Surfliner*	San Luis Obispo-Santa Barbara-Los Angeles-San Diego				
Commuter Rail	Railroad	Peninsula Corridor Joint Powers Board	Peninsula Commute Service (Caltrain)	San Francisco-San Jose-Gilroy	
		Altamont Commuter JPA	ACE	Stockton-San Jose	
		Southern California Regional Rail Authority	Metrolink	<ul style="list-style-type: none"> •San Bernardino Line •Antelope Valley Line •Riverside Line •Ventura County Line •Orange County Line 	<ul style="list-style-type: none"> •Los Angeles- •San Bernardino •Lancaster •Riverside (via East Ontario and Fullerton) •Montalvo •Oceanside
				•Inland Empire-Orange County Line	San Bernardino-San Juan Capistrano
		North County Transit District	Coaster	Oceanside-San Diego	
Urban Rail	Heavy Rail	San Francisco Bay Area Rapid Transit District	BART	<ul style="list-style-type: none"> •San Francisco – •Richmond •Pittsburg/Bay Point •Millbrae/San Francisco International Airport •Dublin/Pleasanton •Fremont Richmond-Fremont	
		Los Angeles County Metropolitan Transportation Authority (LACMTA)	Metro Rail Red Line	<ul style="list-style-type: none"> •Los Angeles – •Wilshire/Western •North Hollywood 	
	Light Rail	Sacramento Regional Transit District	RT Light Rail	<ul style="list-style-type: none"> •Sacramento – •Watt/I-80 •Mather Field/Mills •South Sacramento/Meadowview 	
		San Francisco Municipal Railway	Muni Metro <ul style="list-style-type: none"> •F •J •K •L •M •N 	<ul style="list-style-type: none"> •San Francisco – •Market-Wharves •Church •Ingleside •Taraval •Oceanview •Judah 	
		Santa Clara Valley Transportation Authority	VTA Light Rail	<ul style="list-style-type: none"> •San Jose – •Baypointe •Santa Teresa •Almaden Mountain View – Baypointe	
		LACMTA	Metro Rail Blue Line Metro Rail Gold Line Metro Rail Green Line	<ul style="list-style-type: none"> •Los Angeles-Long Beach •Los Angeles-Pasadena •Norwalk-Redondo Beach 	
		San Diego Trolley, Inc.	San Diego Trolley <ul style="list-style-type: none"> •Blue Line •Blue Line •Orange Line 	<ul style="list-style-type: none"> •San Diego – •San Ysidro/Tijuana •Qualcom Stadium/Mission San Diego •Santee 	
		Cable Car	San Francisco Municipal Railway	Muni Cable Car	<ul style="list-style-type: none"> •San Francisco – •California Street •Powell-Mason/Hyde

* - State supports 70% of all service; Amtrak supports 30%.

- **Heavy Rail** - Transit service using rail cars with motive capability, driven by electric power usually drawn from a third rail, configured for passenger traffic and usually operated on exclusive rights-of-way. Utilizes generally longer trains and consists of longer station spacing than light rail. Formerly rail rapid transit (Federal Transit Administration [FTA] definition). This mode is regulated entirely by the CPUC.
- **Light Rail** - A fixed-guideway mode of urban transportation utilizing predominantly reserved, but not necessarily, grade-separated rights-of-way. It uses primarily electrically propelled rail vehicles, operated singularly or in trains. A raised platform is not necessarily required for passenger access. (In generic usage, light rail includes streetcars, [vintage] trolley cars, and tramways. In specific usage, light rail refers to very modern and more sophisticated developments of these older rail modes.) (FTA definition.)
- **Cable Car** - A streetcar type of vehicle that is propelled by means of an attachment to a moving cable located below the street surface and powered by engines or motors at a central location not on board the vehicle. (FTA definition.)

THE STATE’S ROLE IN RAIL PASSENGER SERVICE

INTERCITY RAIL SERVICES

Intercity train services operate largely between several regions of the State. In California, Amtrak currently operates all State-supported intercity rail service under the provisions of the Federal Rail Passenger Service Act (49 U.S.C. 24101). Until 1998 all intercity rail services were planned and administered by the State. In July 1998, the CCJPA assumed administration of the Capitol Corridor while the State continues to pay operating costs.

Intercity services are components of the State’s overall transportation system. The State encourages local and regional planning agencies to share their ideas and concerns regarding service to their respective areas. Services intended to meet primarily local needs are developed as commuter and urban rail services rather than intercity.

The State and Amtrak each pay a portion of the operating costs of State-supported intercity rail services. The State pays for the majority of capital improvements to intercity rail services. Local agencies often pay for station improvements, and railroads have also made contributions. In the past, the federal government and Amtrak have paid for a minimal amount of capital improvements, but recently Amtrak has increased its capital contributions, particularly for rolling stock acquisition and maintenance facilities.

COMMUTER AND URBAN RAIL SERVICES

Because commuter and urban rail services primarily serve local and regional transportation needs, they are planned and administered by local and regional transportation agencies. Funding is available at the local, State, and federal levels. Operating funds generally come from local funds and State Transit Assistance (STA) funds. Capital funds also come from a variety of local, federal and State sources. The Department is primarily responsible for administering the State grant programs for commuter and urban rail services.

DEFINITION OF COMMUTER VERSUS INTERCITY RAIL

The Federal Rail Passenger Service Act (RPSA) and related legal decisions define commuter and intercity rail service.

The RPSA (49 U.S.C. 24102) states that:

"Commuter rail passenger transportation" means short-haul rail passenger transportation in metropolitan and suburban areas usually having reduced fare, multiple-ride, and commuter tickets and morning and evening peak period operations.

The Penn Central Transportation Company Discontinuance decision (338 ICC 318) was issued by the Interstate Commerce Commission (ICC) after a 1971 investigation held to determine whether certain trains constituted commuter service, thus placing them outside the jurisdiction of Amtrak, which at the time had just been created.

Specifically, the ICC concluded that a commuter service would likely include some or all of the following features:

- The passenger service is primarily being used by patrons traveling on a regular basis either within a metropolitan area or between a metropolitan area and its suburbs.
- The service is usually characterized by operations performed at morning and evening peak periods of travel.
- The service usually honors commutation or multiple-ride tickets at a fare reduced below the ordinary coach fare and carries the majority of its patrons on such a reduced fare basis.
- The service makes several stops at short intervals either within a zone or along the entire route.
- The equipment used may consist of little more than ordinary coaches.

- The service should not extend more than 100 miles at the most, except in rare instances; although service over shorter distances may not be commuter or short haul within the meaning of this exclusion.

The RPSA (49 U.S.C. 24102) also states that:

"Intercity rail passenger transportation" means rail passenger transportation, except commuter rail passenger transportation.

Thus, both the RPSA and the ICC specifically defined commuter rail service in the manner detailed above, and stated that intercity rail service is all other service not falling within the commuter rail definition. The inclusion of State-supported rail services under the RPSA definition of "intercity" is critical. This results from Amtrak's right under RPSA to access freight railroad tracks for the operation of intercity rail services. Also, Amtrak may only be charged the incremental cost to the railroad for such access.

Currently, there is no definition in State law for commuter or intercity rail service. Prior definitions, which essentially referred to the federal definitions, were deleted under Chapter 622, Statutes of 1997 (SB 45 - Kopp).

AMTRAK BASIC SYSTEM SERVICES

Currently, Amtrak operates basic system trains on six routes in California. The Pacific Surfliner Route between San Luis Obispo, Santa Barbara, Los Angeles, and San Diego is unique because it is partially a basic system service and partially State-supported. The other five services are interstate routes that provide varying levels of intrastate service within California.

The following paragraphs briefly describe the various basic system routes serving California and their significance to the State's transportation needs. (California's State-supported trains are the subjects of Chapters V, VI, and VII of the State Rail Plan.) Ridership figures are for Amtrak's 2003-04 fiscal year ending September 30, 2004 and include the total route ridership, not just the portion in California. Figure 2C is a map displaying the basic system routes in California.

Figure 2C



ROUTE DESCRIPTIONS

Pacific Surfliner Route (San Luis Obispo-Los Angeles-San Diego)

Ridership on the Pacific Surfliner Route is only exceeded by service in the Northeast Corridor operating between Boston, New York and Washington, D.C. Eleven round trips operate on Monday through Thursday, and twelve operate on Friday through Sunday between Los Angeles and San Diego. Five daily round-trips are extended north between Los Angeles and Santa Barbara, with two continuing on to San Luis Obispo. Amtrak pays for 30 percent of the entire service as part of Amtrak's basic system. The State pays most of the costs on the remaining 70 percent of the service. Ridership in Federal Fiscal Year (FFY) 2003-04 was 2,344,665, an increase of 7.6 percent from the previous year. Chapter V of this Plan discusses this route in detail.

The Coast Starlight (Los Angeles-Oakland-Sacramento-Portland-Seattle)

The Coast Starlight is the most popular long distance train in the Amtrak system. For many years, demand has often outstripped capacity during summer and holiday travel periods. Ridership in FFY 2003-04 on the service's one daily round-trip totaled 415,598, a decrease of 6.5 percent from the previous year.

The Coast Starlight serves many major urban areas in California and the Pacific Northwest, including Portland and Seattle, and has a bus connection to Vancouver, British Columbia. A substantial portion of its ridership is generated by intrastate California travel. Direct connections with the Pacific Surfliner at Los Angeles effectively extend the route south to San Diego. Connections with the San Joaquin at Sacramento and Martinez provide Central Valley access for travelers to and from the north. State-funded intermodal facilities have been developed at several stops along the Starlight route.

The California Zephyr (Emeryville-Reno-Denver-Chicago)

The California Zephyr provides local service in the Emeryville-Sacramento-Reno corridor; extra coaches are often operated on this portion of the route to handle heavy loads to and from Reno. Connecting buses link Emeryville with San Francisco. A stop in Truckee serves Lake Tahoe and nearby Sierra ski areas. Salt Lake City, Denver, Lincoln and Omaha are also stops on the route to Chicago. Ridership on the one daily round-trip California Zephyr in FFY 2003-04 was 335,764, an increase of 3.8 percent from the prior year.

The Southwest Chief (Los Angeles-Chicago)

The Southwest Chief provides access to the Grand Canyon at Flagstaff and to Albuquerque. The route also provides the only direct rail service from California to Kansas City. Ridership on the service's one daily round-trip totaled 290,003 in FFY 2003-04, an increase of 6.1 percent from the prior year.

The Sunset Limited (Los Angeles-New Orleans-Orlando)

The Sunset Limited operates three days a week in each direction and connects California to many major cities (such as Tucson, El Paso, San Antonio, Houston, New Orleans, Mobile, Tallahassee, Jacksonville and Orlando). It is Amtrak's only transcontinental passenger train. Ridership in FFY 2003-04 totaled 96,426, a decrease of 8.2 percent from the previous year.

The Texas Eagle (Los Angeles-Chicago)

The Texas Eagle operates three days per week in each direction between California points and serves such major cities as Fort Worth, Dallas, Little Rock, St. Louis, and Chicago. It is combined with the Sunset Limited between Los Angeles and San Antonio. Ridership in FFY 2003-04 was 234,619, an increase of 9.5 percent from the previous year.

AMTRAK RIDERSHIP IN CALIFORNIA

Figure 2D shows ridership at each Amtrak train and bus stations in California for FFYs 2000-01 through 2003-04. This table includes ridership on State-supported trains as well as Amtrak's basic system routes. Stations with ticket agent or checked baggage services are also identified.

Figure 2D

AMTRAK TRAIN AND BUS RIDERSHIP BY STATION FEDERAL FISCAL YEARS 2000/01 TO 2003/04 (See Note)															
03-04 Rank	Station	County	Ridership 2003-04	Ridership 2002-03	Ridership 2001-02	Ridership 2000-01	PS	SJ	CC	CS	CZ	TE	SC	SL	Services
							Routes Serving Station *								
1	L. A. Union Station	Los Angeles	1,489,170	1,440,484	1,202,612	1,168,797	TB	B		T		T	T	T	A, Bg
2	Sacramento	Sacramento	1,016,058	1,007,172	913,525	859,180		TB	T	T	T				A, Bg
3	San Diego	San Diego	796,288	753,406	661,290	697,295	TB	B							A, Bg
4	Bakersfield	Kern	666,635	697,573	663,916	645,284	B	T							A, Bg
5	Emeryville	Alameda	651,715	678,675	671,830	742,026		T	T	T	T				A, Bg
6	Irvine	Orange	474,125	350,955	213,983	186,362	T								A
7	Fullerton	Orange	378,717	332,288	254,516	291,198	T						T		A, Bg
8	Solana Beach	San Diego	378,530	346,069	294,771	280,169	TB	B							A, Bg
9	Martinez	Contra Costa	328,026	333,146	319,995	303,990		T	T	T	T				A, Bg
10	Oakland	Alameda	321,045	329,092	326,847	324,827		T	TB	T	B				A, Bg
11	Davis	Yolo	318,299	315,072	290,044	258,866		B	T	T	T				A, Bg
12	Oceanside	San Diego	310,590	329,517	272,420	273,018	TB	B							A, Bg
13	Santa Barbara	Santa Barbara	294,358	284,976	244,469	242,012	TB	B	B	T					A, Bg
14	Anaheim	Orange	291,261	248,636	174,046	171,812	T								A, Bg
15	Stockton	San Joaquin	265,870	279,619	288,372	296,764		TB							A, Bg
16	San Juan Capistrano	Orange	262,412	268,290	234,734	231,885	TB	B							A
17	Fresno	Fresno	242,931	261,541	229,213	228,955		T							A, Bg
18	San Jose	Santa Clara	205,753	221,103	237,852	260,194		B	TB	T					A, Bg
19	Richmond	Contra Costa	203,687	170,477	148,103	121,846		T	T						
20	San Francisco	San Francisco	196,634	196,892	196,892	223,564		B	B	B	B				A, Bg
21	Santa Ana	Orange	174,824	180,514	140,028	148,226	TB	B							A, Bg
22	Hanford	Kings	151,125	159,515	149,758	146,523		T							A, Bg
23	Suisun-Fairfield	Solano	108,825	101,716	92,721	78,704			T						
24	Oxnard	Ventura	92,044	95,295	83,957	83,697	TB	B		T					A, Bg
25	San Luis Obispo	San Luis Obispo	89,985	90,391	88,296	95,989	TB	B	B	T					A, Bg
26	Merced	Merced	86,774	94,646	87,191	95,549		T							A, Bg
27	Van Nuys	Los Angeles	79,425	78,404	74,998	78,470	TB	B							A, Bg
28	Modesto	Stanislaus	73,296	73,658	68,475	67,023		T							A, Bg
29	Great America	Santa Clara	72,570	82,095	94,434	203,272			TB						
30	Roseville	Placer	66,189	66,377	64,085	55,443			TB		T				
31	Berkeley	Alameda	63,840	63,603	73,198	67,773			T						
32	Glendale	Los Angeles	47,902	51,290	47,087	46,665	TB	B		T					
33	Chatsworth	Los Angeles	46,365	41,749	24,920	31,506	TB								
34	Auburn	Placer	45,773	46,213	40,228	38,464		B	TB						
35	Goleta	Santa Barbara	45,666	30,299	24,452	19,513	T								
36	Simi Valley	Ventura	41,455	48,029	41,578	36,768	TB	B		T					
37	Ventura	Ventura	38,002	34,581	29,795	28,737	TB	B							
38	Burbank Airport	Los Angeles	36,989	38,988	31,194	32,547	T	B							
39	Rocklin	Placer	34,982	39,582	35,233	27,651		B	TB						
40	Santa Cruz	Santa Cruz	28,651	51,363	62,179	60,502		B	B						
41	Fremont	Alameda	28,001	26,496	29,401	60,302		B	TB						
42	Salinas	Monterey	27,920	28,352	29,867	33,704		B	B	T					A, Bg
43	Hayward	Alameda	23,776	23,670	25,598	40,370			TB						
44	Corcoran	Kings	22,817	23,831	26,908	25,159		T							
45	Antioch-Pittsburg	Contra Costa	20,732	20,463	21,047	20,789		T							
46	Needles	San Bernardino	19,669	19,153	18,084	17,747							T		
47	San Bernardino	San Bernardino	19,112	20,354	21,664	35,270		B					T		
48	Camarillo	Ventura	18,730	13,911	8,325	6,990		T							
49	Redding	Shasta	18,168	18,049	14,522	14,911		B	B	T					
50	Chico	Butte	17,177	16,808	17,068	18,842		B	B	T					

* Route and Symbol Key:

PS Pacific Surfliner (San Luis Obispo-Los Angeles-San Diego)	CZ California Zephyr (Emeryville-Chicago)
SJ San Joaquin (Bay Area/Sacramento-Fresno-Bakersfield)	TE Texas Eagle (Los Angeles-Chicago)
CC Capitol Corridor (Auburn-Sacramento-Oakland-San Jose)	SC Southwest Chief (Los Angeles-Chicago)
CS Coast Starlight (Los Angeles-Oakland-Sacramento-Seattle)	SL Sunset Limited (Los Angeles-Orlando)

T Train at this location	TB Train and bus at this location	B Connecting bus at this location
A Ticket Agent at this location		Bg Checked baggage at this location

NOTE: Official Amtrak ridership data for four Federal Fiscal Years (October 2000 through September 2004). Includes all passengers originating or terminating at each station on all routes shown above.

Figure 2D (Continued)

AMTRAK TRAIN AND BUS RIDERSHIP BY STATION																
FEDERAL FISCAL YEARS 2000/01 TO 2003/04																
03-04 Rank	Station	County	2003-04 Ridership	2002-03 Ridership	2001-02 Ridership	2000-01 Ridership	Routes Serving Station *								Services	
							PS	SJ	CC	CS	CZ	TE	SC	SL		
51	Carpinteria	Santa Barbara	17,211	14,086	12,539	10,652	TB	B								
52	Grover Beach	San Luis Obispo	16,836	16,927	16,137	15,702	TB	B	B							
53	Wasco	Kern	14,557	14,370	15,975	15,805		T								
54	Paso Robles	San Luis Obispo	13,997	13,802	14,030	14,048	B	B	B	T						
55	Turlock-Denair	Stanislaus	13,576	13,888	14,123	15,071		T								
56	Yosemite Natl. Park	Mariposa	13,368	16,792	14,250	22,007		B								
57	Madera	Madera	12,406	13,202	12,679	12,706		T								
58	Riverside	Riverside	11,692	11,534	8,254	6,417		B								
59	Truckee	Nevada	11,212	11,355	11,051	10,943		B	B		T					
60	South Lake Tahoe	El Dorado	9,788	9,131	6,423	4,885		B	B							
61	Santa Rosa	Sonoma	9,653	10,199	11,030	11,974		B	B							
62	Santa Maria	Santa Barbara	8,408	7,810	7,398	6,582	B	B	B							
63	Moorpark	Ventura	8,146	8,453	5,905	10,099	TB									
64	Long Beach	Los Angeles	7,684	7,076	8,607	8,660	B	B								
65	San Pedro	Los Angeles	6,663	4,909	2,509	1,565		B								
66	Ontario	San Bernardino	6,613	6,381	6,254	5,897	B					T		T		
67	Guadalupe	Santa Barbara	6,362	6,537	5,408	6,005	TB									
68	Victorville	San Bernardino	6,505	5,206	4,354	4,381							T			
69	San Clemente	Orange	6,135	5,015	3,862	4,253	T									
70	Vallejo-Marine World	Solano	6,066	7,967	6,814	10,524		B	B							
71	Napa	Napa	5,253	5,376	6,303	6,158		B	B							
72	Pasadena	Los Angeles	4,762	5,939	5,427	5,589	B									
73	Dunsmuir	Siskiyou	4,667	4,187	4,593	5,280				T						
74	Nevada City	Nevada	4,572	8,292	5,928	6,446	B	B								
75	Barstow	San Bernardino	4,288	4,174	3,546	3,959	B							T		
76	Arcata	Humboldt	4,202	3,894	3,837	4,315	B	B								
77	Colfax	Placer	4,102	4,309	3,850	4,066	B	B		T						
78	Claremont	Los Angeles	4,051	4,211	4,176	4,191		B								
79	Surf/Lompoc	Santa Barbara	3,961	7,034	7,646	7,030	TB									
80	Santa Clarita-Newhall	Los Angeles	3,953	3,886	3,569	3,678	B	B								
81	Stateline	El Dorado	3,848	249	976	626		B	B							
82	Eureka	Humboldt	3,216	3,280	3,379	3,268	B	B								
83	Lancaster	Los Angeles	3,178	2,925	2,842	3,069		B								
84	Solvang	Santa Barbara	3,071	4,421	4,545	3,789	B		B							
85	Marysville	Yuba	2,924	2,977	2,649	2,811		B	B							
86	Oroville	Butte	2,662	2,645	2,614	2,821		B	B							
87	Placerville	El Dorado	2,363	2,090	2,681	3,397		B	B							
88	Ukiah	Mendocino	2,141	1,683	1,799	1,987		B	B							
89	Petaluma	Sonoma	2,066	2,052	2,201	2,235		B	B							
90	Lompoc	Santa Barbara	1,982	3,017	4,418	3,652	B									
91	McKinleyville	Humboldt	1,863	1,990	1,344	2,056		B	B							
92	Rohnert Park	Sonoma	1,834	1,947	1,986	1,983		B	B							
93	Tehachapi	Kern	1,815	1,768	1,231	991		B								
94	Grass Valley	Nevada	1,747	3,407	3,485	4,123		B	B							
95	Monterey	Monterey	1,697	5,491	8,284	9,069		B	B							
96	Palm Springs	Riverside	1,649	1,948	1,713	2,026	B				T		T			
97	Hemet	Riverside	1,644	1,811	1,482	1,190		B								
98	Palmdale	Los Angeles	1,429	1,240	1,192	1,381		B								
99	Palm Springs Airport	Riverside	1,349	1,293	1,615	1,523		B								
100	Dublin-Pleasanton	Alameda	1,397	1,254	1,325	1,209		B								
101	Visalia	Tulare	1,100	1,204	957	295		B								

* Route and Symbol Key:			
PS	Pacific Surfliner (San Luis Obispo-Los Angeles-San Diego)	CZ	Calif. Zephyr (Emeryville-Chicago)
SJ	San Joaquin (Bay Area/Sacramento-Fresno-Bakersfield)	TE	Texas Eagle (Los Angeles-Chicago)
CC	Capitol Corridor (Auburn-Sacramento-Oakland-San Jose)	SC	Southwest Chief (Los Angeles-Chicago)
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T	Train at this location	TB	Train and bus at this location
A	Ticket Agent at this location	B	Connecting bus at this location
		Bg	Checked baggage at this location

Figure 2D (Continued)

AMTRAK TRAIN AND BUS RIDERSHIP BY STATION FEDERAL FISCAL YEARS 2000/01 TO 2003/04																
03-04 Rank	Station	County	Ridership	Ridership	Ridership	Ridership	Routes Serving Station *							Services		
			2003-04	2002-03	2001-02	2000-01	PS	SJ	CC	CS	CZ	TE	SC		SL	
102	Red Bluff	Tehama	1,010	925	1,053	1,190		B	B							
103	Atascadero	San Luis Obispo	1,086	919	990	898	B	B								
104	Fortuna	Humbolt	965	803	863	893		B	B							
105	Santa Paula	Ventura	891	873	799	854		B								
106	Mojave	Kern	865	867	956	1,013		B								
107	Carmel	Monterey	863	865	1,079	995		B	B							
108	Garberville	Humbolt	822	670	767	842		B	B							
109	Livermore	Alameda	791	760	932	812		B								
110	Pomona	Los Angeles	786	679	679	690							T		T	
111	Tracy	San Joaquin	735	820	763	735		B								
112	Moreno Valley	Riverside	557	332	332	301		B								
113	Corning	Tehama	533	591	653	742		B	B							
114	Perris	Riverside	490	351	386	362		B								
115	Fillmore	Ventura	446	387	369	377		B								
116	La Crescenta	Los Angeles	414	498	444	389		B								
117	Palm Desert	Riverside	404	449	431	463		B								
118	Mariposa	Mariposa	363	326	342	491		B								
119	Cameron Park	El Dorado	362	749	936	1,038		B	B							
120	Healdsburg	Sonoma	357	333	333	315		B	B							
121	Buellton	Santa Barbara	350	344	220	150		B								
122	Gilroy	Santa Clara	307	368	507	568		B	B							
123	Rosamond	Kern	268	261	266	202		B								
124	Beaumont	Riverside	256	244	252	207		B								
125	Cloverdale	Sonoma	237	199	225	297		B	B							
126	Rio Dell-Scotia	Humbolt	214	162	132	162		B	B							
127	Soda Springs	Nevada	180	235	259	238		B	B							
128	Laytonville	Mendocino	171	205	120	175		B	B							
129	King City	Monterey	156	72	72	128		B	B							
130	Midpines	Mariposa	141	142	342	198		B								
131	Leggett	Mendocino	68	65	49	64		B	B							
132	El Portal	Mariposa	62	92	49	73		B								
133	Boron	Kern	40	46	58	139		B								
134	Littlerock	Los Angeles	37	58	42	44		B								
135	Lemoore	Kings	34	64	44	68		B								
136	Rancho Cordova	Sacramento	33	278	398	581		B	B							
137	Soledad	Monterey	23	27	37	27		B	B							
138	Goshen Jct.	Tulare	13	19	5	6		B								
139	Kettleman City	Kings	12	30	25	21		B								

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OTHER PASSENGER RAIL SERVICES

Other railroads in California offer more limited rail passenger service, which is generally tourist oriented. These non-Amtrak intercity rail passenger services remain subject to the regulatory jurisdiction of the California Public Utilities Commission (CPUC), FRA, and the Surface Transportation Board (STB).

The California Western Railroad (CWR) between Fort Bragg and Willits in Mendocino County has been the principal privately owned railroad in California offering regularly scheduled rail passenger service. Excursion related passenger traffic on the CWR's 40-mile route was its primary business, with 60,225 passengers handled in their fiscal year ending May 2000. The CWR filed for Chapter 11 bankruptcy and ceased operating on September 2, 2003, at which time the railroad was offered for sale. Sierra Entertainment, a subsidiary of the Sierra Railroad acquired the line and opened it in May 2004 for passenger excursion service. To contact the "Skunk Train", contact 1-800-866-1690.

Other railroads offer rail passenger tourist service generally only during summer and holiday periods. For additional information on rail passenger tourist service, call California Tourism at 1-800-862-2543 or access their website at www.visitcalifornia.com.

RELATIONSHIP TO FREIGHT RAIL SERVICES

Most rail lines in California are owned and operated by private railroad companies, such as BNSF Railway (BNSF) and Union Pacific Railroad (UP). The primary function of private railroads in California is to provide rail freight service to shippers within California, and between California and other points in the United States, Canada and Mexico. Upon request of Amtrak (for intercity rail passenger service) and local or regional entities (for commuter rail passenger service), these freight railroads enter into contracts to allow operation of rail passenger services on their lines. Under such contracts the railroads typically provide use of their tracks, signal and dispatching systems, and certain station and yard facilities. They are compensated by Amtrak and other public entities under the provisions of the applicable operating contracts. Contracts with Amtrak for provision of intercity service are executed pursuant to the Federal Rail Passenger Service Act (49 U.S.C. 24101).

Capital improvement projects are often required to provide sufficient capacity to allow both the new rail passenger service and the existing freight service to operate efficiently on main line tracks owned by the freight railroads. To facilitate introduction of new or expanded intercity and commuter rail passenger services, the Department and other public entities often fund improvement projects that may also benefit the freight railroads. These improvements are usually constructed by the railroad. Freight rail service is discussed in the freight rail element of the State Rail Plan beginning with Chapter IX.

CHAPTER III

FUNDING AND CAPITAL PROGRAM

This section contains a discussion on Intercity Rail Funding and the Intercity Rail Capital Program, including a 10-year capital plan.

INTERCITY RAIL FUNDING

Funding for intercity rail systems comes primarily from State sources, but also includes local, federal, Amtrak, and railroad funding sources. Below is an overview of these funding sources.

PUBLIC TRANSPORTATION ACCOUNT (PTA)

The PTA is the exclusive source of intercity rail operating funds (as discussed in Chapter IV) and a potential source of intercity rail capital funds. Proposition 116 designated the PTA as a trust fund to be used only for transportation planning and mass transportation purposes. Revenues flow to the PTA from several sources. The PTA's traditional source of funding is a 4.75 percent portion of the 7.0 percent state sales tax on diesel fuel. Next, a 4.75 percent portion of the 7.0 percent state sales tax on nine cents of the State's eighteen-cent excise tax on gasoline goes to the PTA. Proposition 111, enacted in 1989, established this latter funding source.

The Traffic Congestion Relief Program (TCRP), [Chapter 91, Statutes of 2000 (AB 2928 - Torlakson)], enacted changes that provided two major new funding sources to the PTA. The purpose of the TCRP was to provide additional funding to transportation projects and to the PTA from 2001-02 through 2005-06. The major new source of funding is gasoline sales tax revenues that had previously gone to the General Fund. However, soon after the TCRP was enacted, the state experienced a fiscal crisis, and the funding to the program was revised to delay, until 2003-04, transfer of sales tax revenues to the Transportation Investment Fund (TIF). Proposition 42 added Article XIX B to the California Constitution in March 2002 that, beginning in 2008-09, makes permanent the transfer of gasoline sales tax revenue to the TIF. Proposition 42 specifies that the PTA will receive 20 percent of the gasoline sales tax revenue.

In 2004, legislation was enacted due to the State's financial crisis that suspended the Proposition 42 transfer for fiscal year 2004-05. Beginning in 2005-06, about \$100 million is projected to be transferred annually from the TIF to the PTA. However, due to the ongoing state funding shortfalls, it is unknown whether these transfers will actually take place. Once the TCRP projects have been fully funded (estimated to be in 2009-10), transfers to the PTA are projected to almost double.

AB 2928 also authorized the annual transfer, starting in 2001-02, of all non-gas tax revenue funds in the SHA to the PTA. These SHA funds are derived from the sale of documents, charges for miscellaneous services to the public, rental of State property, etc. The transfer was \$60 million in 2003-04 and is estimated to be \$47 million in 2004-05.

The Public Utilities Code (Sections 99312 and seq.) governs the uses of PTA funds that are derived from sales tax revenues. These funds include the traditional PTA sources of sales tax on diesel and the Proposition 111 - gasoline sales tax and TIF gasoline sales tax. Fifty percent of these revenues go to the State Transit Assistance (STA) Program, which assists local entities in funding transit service. The remaining monies are available to fund a number of State programs including: intercity rail operations; rail, mass transportation and planning staff support; and mass transit capital projects. The 2001-02 State Budget included \$91 million in PTA funds for projects to build additional double track segments on the three State-supported intercity rail corridors.

The 2004 STIP Fund Estimate identifies projected revenues and uses of PTA funds through 2008-09.

STATE HIGHWAY ACCOUNT (SHA)

The bulk of the SHA supports the State's highway system, but a portion of the account also supports rail projects in the State Transportation Improvement Plan (STIP). The SHA receives its funds from State gasoline and diesel fuel taxes, State vehicle weight fees and reimbursements from the Federal Trust Fund for federal-aid projects. Use of the State generated portion of the SHA is governed by Article XIX of the State Constitution that allows the funds to be used for research, planning, construction, improvement, maintenance and operation of public streets and highways. Additionally, the SHA can be used for the research, planning, construction, and improvement of public mass transit guideways (which includes intercity, commuter and urban rail, and electric trolley bus services) and their fixed facilities. The SHA cannot be used for mass transit vehicle acquisition or maintenance and mass transit operating costs.

The 1989 Blueprint Legislation allowed intercity rail projects to compete for SHA funds in the STIP. Then Chapter 622, Statutes of 1997 (SB 45 - Kopp), reserved for intercity rail and grade separation projects a minimum of nine percent of the interregional portion of the STIP as part of the Interregional Transportation Improvement Program (ITIP). SB 45 also allowed intercity rail projects to be programmed in the Regional Transportation Improvement Program (RTIP). As a result, in the 1996 through 2002 STIP biennial cycles, a total of \$468.6 million was programmed for intercity rail projects from the SHA. Of this amount, \$321.1 million has been allocated. However, as a result of the recent funding deficits, since May 2003 all intercity passenger rail project allocation requests

presented to the California Transportation Commission (CTC) have been put on a pending projects list, and then were included in the 2004 STIP.

TRAFFIC CONGESTION RELIEF FUND (TCRF)

Chapter 91, Statutes of 2000 (AB 2928 - Torlakson), established the Traffic Congestion Relief Program (TCRP) to be funded from the TCRF. The TCRP specified a list of projects to be funded from the Program, including \$206.5 million for specific intercity rail capital projects. The section above on the PTA describes in general the funding sources for the TCRP.

To date \$42.6 million has been allocated from the TCRF to intercity rail projects. However, as mentioned above, all allocation requests for TCRP projects have been suspended since May 2003. In 2005-06 Proposition 42 transfers to fund TCRP projects are scheduled to be \$678 million. But as stated previously, it is uncertain whether these transfers will materialize.

TRIBAL COMPACT BONDS

Chapter 91, Statutes of 2004 (AB 687, Nunez) ratified amendments to the Tribal-State Gaming compacts renegotiated by the Governor and five tribes with gaming income. The bill authorized the issuance of bonds, secured by up to \$1.5 billion in Indian gaming revenue, to be dedicated for transportation improvement purposes. Based on the Statute, the PTA would receive \$275 million of this revenue and the SHA would receive \$457 million. However, it is still unclear when the revenue will materialize.

THE PASSENGER RAIL AND CLEAN AIR BOND ACT OF 1990 (PROPOSITION 108)

The 1989 Blueprint Legislation authorized three \$1 billion rail bond measures to be placed on the ballot in 1990, 1992 and 1994. In 1990, the voters approved the first \$1 billion rail bond measure, The Passenger Rail and Clean Air Bond Act of 1990. To date, almost all bond proceeds have been used to fund new rail projects and improvements to existing systems, including \$225 million for intercity rail capital projects. The voters did not approve the subsequent two bond measures in 1992 and 1994.

CLEAN AIR AND TRANSPORTATION IMPROVEMENT ACT OF 1990 (PROPOSITION 116)

Proposition 116 provided a \$1.99 billion one-time source of funding for rail and transit projects. Proposition 116 contained about \$382 million for intercity rail capital projects, \$1.37 billion for urban and commuter rail projects, and \$235 million for other transit and transit related projects. Most of these bond funds have been allocated.

GENERAL FUND (GF)

The 1999-00 and 2000-01 State Budgets provided GF money for intercity rail capital projects. The 1999-00 Budget included \$17.5 million for new intercity rail rolling stock and the 2000-01 Budget also provided \$30 million for this purpose.

LOCAL FUNDS

Although intercity rail passenger services are funded primarily by the State, a substantial amount of local funds have been invested, mainly on the Pacific Surfliner Route, to fund commuter rail development. These funds serve to enhance commuter rail service improving tracks, signals and stations also used by intercity trains. Also, intercity rail stations are often owned by cities and funded with local revenue in addition to STIP funding. The Department will work with local and regional entities that may wish to fund higher levels of service than State resources are able to provide.

FEDERAL FUNDS

Federal transportation funds from various programs are used for intercity rail projects. In particular, funding has been provided for station projects from the FTA Section 5307 and 5309 capital programs. However, federal flexible transportation funds, such as are provided through the Surface Transportation Program, are generally not available for intercity rail projects.

Several bills providing funds for intercity rail capital investment were debated in recent congressional sessions, and are expected to be introduced in the next session in 2005. Although each bill differs, certain key features are included in several. They were the provision of long-term bonding authority for rail capital improvements on qualifying routes nationwide, which include all of California's existing State-supported routes. The federal government would provide tax credits to bondholders in lieu of interest payments. The funds would have been invested in upgrading existing lines to high-speed rail, constructing new high-speed rail lines, purchasing high-speed rail equipment, eliminating or improving grade crossings, station development and other capital upgrades. States would be required to provide 20 percent of the cost of the funded projects.

Other bills also included various funding provisions, such as grants, direct loans, loan guarantees, and tax exempt and tax credit bonds. The proposals would have funded capital projects for high-speed rail passenger service, increase intercity rail security and safety, and provide economic stimulus.

AMTRAK FUNDS

Amtrak supports 30 percent of the Pacific Surfliner Route, as this portion is considered part of their "Basic System", and not state-supported service.

On the capital side, Amtrak develops and funds some California intercity rail capital projects. The largest investment has been in maintenance facilities and rolling stock. As a result of the Taxpayer Relief Act of 1997, Amtrak was provided over \$2 billion in capital funds for its nationwide system. Over the past six years, Amtrak has increased its investment in California. For example, Amtrak purchased 40 new passenger cars and 14 locomotives for the Pacific Surfliner Route at a cost of about \$135 million.

Figure 3A

Amtrak Five-Year Strategic Plan - Capital Projects		
California Projects	Summary of Project Scope	Amtrak Funding FFY 2005-09
Los Angeles Yard – New Equipment	Replace electric carts and shop equipment	\$ 50,000
Surfliner Equipment – Overhauls	Replace most parts due for renewal, along with some upgrades and structural repairs	10,600,000
Los Angeles Yard Improvements	Install roof for commissary and material control building, wheel truing machine, sand tower and industrial waste line	2,400,000
Service & Inspection Facilities Running Repair	Replace specialty tools, equipment, etc. for LA and OAK S&I Facilities	7,500,000
Los Angeles Yard Track	Construct tracks to connect to 9 th Street	250,000
Los Angeles Union Station Improvements	Install tactile warning tiles on Tracks 10,11,12	350,000
Oakland Maintenance Facility Phase II	Construction of Commissary and Welfare facilities	14,000,000
Oakland Maintenance Facility Yard Demobilization	Demolish existing infrastructure in UP Yard	300,000
Emeryville Station Lease/Purchase	Provide funds for lease/purchase of the station	400,000
Extension of Pacific Surfliner Double Track – CP Flores to CP O’Neal	Construct 1.8 miles of second mainline track, including Centralized Traffic Control (CTC)	1,250,000
San Diego – New Layover and Light Maintenance Facility	Participate in the construction of a multi-story building, of which the first floor is to be used by Amtrak and Caltrans to store equipment and materials needed for rolling stock maintenance	350,000
Oakland – Station Access and Platform Improvements	Construct station track, platform, and control point improvements	680,000
Rocklin Station	Construct improvements to meet ADA Requirements	250,000
Capitol Corridor	Install Closed Circuit Television in 8 stations along Capitol Corridor	300,000
San Joaquin Corridor	Install Closed Circuit Television in 8 stations along San Joaquin Corridor	300,000
Salinas Station	Reconstruct Salinas Platform	2,524,700
	California Projects Total	\$41,504,700

Figure 3A (continued)

Amtrak Five-Year Strategic Plan - Capital Projects - continued		
Multi-State Projects	Summary of Project Scope	Amtrak Funding FFY 2005-09
Rail Replacement and Rehabilitation – Pacific and Southwest Divisions	Replace and rehabilitate rail, wood ties, and turnouts	6,400,000
Superliner II Equipment – Overhauls	Replace most parts due for renewal, along with some upgrades and structural repairs	21,200,000
Superliner I Equipment – Overhauls	Modify or remanufacture existing equipment	13,600,000
F59PHI Diesel Locomotive Overhauls	Replace most parts due for renewal, along with some upgrades and structural repairs	5,200,000
Western Division Pollution Prevention	Construct pollution prevention upgrades and improvements	2,220,000
	Multi-State Projects Total	\$48,620,000
	GRAND TOTALS	\$90,124,700

Amtrak’s Strategic Plan FFY 2005-2009 proposes funding for several projects in California. The Plan focuses on returning Amtrak to a firm operational and financial footing by restoring its assets to a state-of-good-repair after years of deferred maintenance. The Strategic Plan includes \$90.1 million for projects which impact California, of which \$41.5 million is for projects wholly in California and \$48.6 million is for multi-state projects that partially impact California. The actual level of funding for these projects is dependent on Congressional appropriations during the period of the Plan. Figure 3A lists the California related projects included in the Amtrak Strategic Plan.

RAILROAD FUNDS

The State and the railroads owning the right-of-way of intercity rail passenger routes sometimes share in the cost of track and signal improvement projects.

INTERCITY RAIL CAPITAL PROGRAM

BACKGROUND

Since the Amtrak era began in 1971, over \$2.8 billion has been invested in intercity rail capital projects in California. The largest investor is the State. However, there also have been significant investments by local entities, Amtrak railroads and the federal government.

As is discussed in Chapter IV, intercity rail service in California has grown dramatically since 1971. These service increases were dependent on the implementation of capital projects. Track and signal projects have increased capacity and speed. Station projects have allowed for new services, new stops and

improved accommodations at renovated stations. New rolling stock has allowed for new services, and improved passenger service and comfort. For example, the Department has purchased 88 new California Car passenger cars and 15 new F-59 locomotives.

The intercity rail capital program was originally funded from special legislation and the Intermodal Facilities Program. This program was then broadened to become the TCI Program, which had a number of eligible project categories, using both Transportation Planning and Development (TP&D) Account funds and SHA funds. In the late 1980s, some capital funding was provided through direct appropriations in the Budget Act or in other legislation.

In 1990, capital funding for intercity rail increased dramatically. First, legislation passed that authorized the placement on the ballot of a bond measure in 1990, identified as Proposition 108, for \$1 billion in bond funds for rail projects, including about \$225 million for intercity rail. This bond issue passed. In addition, another measure on the same ballot, Proposition 116, an initiative measure, and it also was also approved. It provided \$2 billion for rail, including about \$382 million for intercity rail. To date, practically all available Proposition 108 and 116 funds for intercity rail have been used.

The 1989 legislation also allowed intercity rail to receive more capital funding from the SHA. Later, Chapter 622, Statutes of 1997 (SB 45 - Kopp), was passed which gives intercity rail projects a minimum of 9 percent of the interregional portion of the STIP as part of the ITIP. Intercity rail projects can also be funded in the RTIP. As a result, in the 1996 STIP, 1998 STIP, the 1998 STIP Augmentation, the 2000 STIP, and the 2002 STIP a total of \$468.6 million was programmed for intercity rail projects. Of that amount \$321.1 million has been allocated. Due to severe funding constraints, the 2004 STIP did not program any new funding for intercity rail projects. It includes only projects previously programmed in the 2002 STIP, but not yet allocated.

Chapter 91, Statutes of 2000 (AB 2928 - Torlakson), established the Governor's Traffic Congestion Relief Program (TCRP) to be funded from the Traffic Congestion Relief Fund (TCRF). The TCRP contained \$201.5 million for specific intercity rail capital projects, including \$148.5 million for the Pacific Surfliners for the Los Angeles run-through project to reduce running times through Union Station in Los Angeles, a triple track project in Los Angeles County, double track projects in San Diego County, a new San Diego area maintenance facility, and a parking structure at Oceanside. Also, \$25 million was reserved to double track portions of the San Joaquins, and \$28 million was reserved for the Capitol Corridor for track and signal improvements between Oakland and San Jose, for track improvements at the Emeryville and Oakland stations, and for a new station at Hercules.

Two recent State Budgets provided funding from the GF for intercity rail capital projects. The 1999-00 Budget provided \$17.5 million for equipment acquisition. The 2000-01 Budget included \$30 million for equipment, and \$20 million for track improvements on the San Joaquin Route.

Also in 1999-00, \$17.0 million in proceeds from leveraged leaseback of the existing California Car and locomotive fleet was received for purchase of new intercity rail equipment. The 2001-02 Budget included \$91 million in Public Transportation Account (PTA) funds for track improvements on all three State-supported routes.

Even with these new funding sources for intercity rail, rail equipment continues to lack an ongoing funding source. This is because restrictions under Article XIX of the State Constitution do not allow rail equipment to be funded from SHA funds.

Rail passenger cars and locomotives require scheduled heavy overhaul based on manufacturers recommended intervals, and when required to maintain system reliability. The projected annual overhaul cost is approximately \$12 million, funded from PTA.

HISTORICAL CAPITAL FUNDING

Figure 3B provides a summary of all capital funding for intercity rail in California since close to the beginning of the Amtrak era. The summary reflects all expended and allocated funds, including funds from Propositions 108 and 116, funds provided by the TCRP, and funds programmed in the 1996, 1998, 2000, and 2002 STIPs and carried over to the 2004 STIP. To date, over \$2.8 billion has been invested or reserved, including projects for stations, track and signal improvements, maintenance and layover facilities and rolling stock. Although the State has provided about 63 percent of the total investment, local entities, the federal government, Amtrak, and the private railroads have made major contributions.

The Department's publication, the *California Intercity Rail Capital Program*, December 1, 2004, details the projects shown in Figure 3B.

Figure 3B

**Intercity Rail Capital Program Funding History
1976-77 through December 2004
Expended and Reserved Funds**

SUMMARY OF PROJECTS BY PROJECT TYPE (\$ in Millions)						
Route	Project Type				Total	
	Stations	Track and Signal	Maintenance and Layover Facilities	Rolling Stock		
<i>Pacific Surfliner - North</i>	\$ 102.9	\$ 240.3			\$ 343.2	
<i>Pacific Surfliner - South</i>	\$ 138.1	\$ 668.6			\$ 806.7	
<i>Total Pacific Surfliner</i>	\$ 241.0	\$ 908.9			\$ 1,149.9	
<i>San Joaquin</i>	\$ 153.7	\$ 377.4			\$ 531.1	
<i>Capitol Corridor</i>	\$ 99.9	\$ 194.0			\$ 293.9	
Other Routes	\$ 43.1	\$ 24.4			\$ 67.5	
Maintenance and Layover Facilities			\$ 155.3		\$ 155.3	
Rolling Stock				\$ 612.7	\$ 612.7	
Grand Total	\$ 537.7	\$ 1,504.7	\$ 155.3	\$ 612.7	\$ 2,810.4	

SUMMARY OF PROJECTS BY FUNDING SOURCE (\$ in Millions)							
Route	Funding Source					Total	
	State	Local	Federal	Amtrak	Railroad		Other
<i>Pacific Surfliner - North</i>	\$ 228.4	\$ 85.3	\$ 25.1	\$ 3.1	\$ 1.3	\$ 343.2	
<i>Pacific Surfliner - South</i>	\$ 517.7	\$ 104.8	\$ 148.8	\$ 15.9	\$ 7.1	\$ 12.4	\$ 806.7
<i>Total Pacific Surfliner</i>	\$ 746.1	\$ 190.1	\$ 173.9	\$ 19.0	\$ 8.4	\$ 12.4	\$ 1,149.9
<i>San Joaquin</i>	\$ 399.5	\$ 31.3	\$ 32.7	\$ 2.6	\$ 63.3	\$ 1.7	\$ 531.1
<i>Capitol Corridor</i>	\$ 197.9	\$ 49.1	\$ 31.1	\$ 1.2	\$ 14.5	\$ 0.1	\$ 293.9
Other Projects	\$ 30.3	\$ 7.9	\$ 20.2	\$ 3.0	\$ 6.1		\$ 67.5
Maintenance and Layover Facilities	\$ 81.0	\$ 0.3		\$ 74.0			\$ 155.3
Rolling Stock	\$ 307.3		\$ 0.1	\$ 299.0		\$ 6.3	\$ 612.7
Grand Total	\$ 1,762.1	\$ 278.7	\$ 258.0	\$ 398.8	\$ 92.3	\$ 20.5	\$ 2,810.4

PROJECTED CAPITAL FUNDING

As discussed in Chapter I, Amtrak has conducted a vision exercise, including the issuance of the *California Passenger Rail System 20-Year Improvement Plan* (the Amtrak Plan) in March 2001. The Department concurs with the “Immediate” (up to 3 years) and “Near-term” (up to 8 years) increments of the Amtrak Plan. The “Vision” increment of the Amtrak Plan extends it to 20 years and over \$10 billion in funding needs.

The Department’s 10-year capital program uses the “Immediate” and “Near-term” increments of the Amtrak Plan as input to development of the Department’s 10-year capital needs. Figure 3C shows a projected \$3.7 billion in 10-year capital funding needs for the existing and new routes shown in this table. This \$3.7 billion capital program represents an unconstrained program based on

project needs, and not funding expectations. See Figure 3D for a constrained capital program.

Figure 3C

10-Year Intercity Rail Capital Program FY 2004-05 through FY 2013-14 Project Costs (in millions)							
Route	Project Development (PE, EIR/S, CM) ①	Right of Way	Track & Signal	Stations	Grade Crossings	Rolling Stock & Maintenance Facilities ②	Total Cost
EXISTING ROUTES							
Pacific Surfliner North	\$ 72.1	\$ 13.8	\$ 469.4	\$ 6.7	\$ 7.7	③	\$ 569.7
Pacific Surfliner South	\$ 153.4	\$ 16.3	\$ 899.0	\$ 40.3	\$ 22.0	\$ 28.1	\$ 1,159.1
San Joaquin	\$ 146.2	\$ 3.5	\$ 668.7	\$ 7.1	\$ 72.6	\$ 40.1	\$ 938.2
Capitol Corridor	\$ 55.8	\$ 3.9	\$ 285.6	\$ 54.1	\$ 15.4	\$ 43.1	\$ 457.9
Subtotal	\$ 427.5	\$ 37.5	\$ 2,322.7	\$ 108.2	\$ 117.7	\$ 111.3	\$ 3,124.9
PROPOSED ROUTES							
Coast	\$ 66.4	\$ 18.2	\$ 415.8	\$ 8.1	\$ 14.9	\$ 26.7	\$ 550.1
Monterey	\$ 5.9	\$ -	\$ 17.5	\$ 2.5	\$ 1.1	\$ 26.7	\$ 53.7
Subtotal	\$ 72.3	\$ 18.2	\$ 433.3	\$ 10.6	\$ 16.0	\$ 53.4	\$ 603.8
TOTAL	\$ 499.8	\$ 55.7	\$ 2,756.0	\$ 118.8	\$ 133.7	\$ 164.7	\$ 3,728.7
① Preliminary Engineering, Environmental Impact Report/Study, Construction Management ② Includes costs for new rolling stock if purchased instead of leased ③ Included in Pacific Surfliner South Capital costs for other proposed routes (Redding, Reno, Coachella Valley and Las Vegas) were not studied in the Amtrak Plan, and current comparable cost estimates are not presently available.							

The specific capital categories in the table are project development, right of way, track and signal, stations, grade crossings, rolling stock and maintenance facilities. For new routes, estimates are preliminary and subject to change based on the results of capacity and engineering studies.

The Department’s priorities for implementation of capital projects in the State Rail Plan are:

- Increase the cost-effectiveness of State-supported intercity rail service by increasing revenues and reducing costs, thereby increasing the farebox ratio to reach or exceed the Department’s 50 percent standard.
- Increase capacity on existing routes to allow increased frequencies and improved reliability as a result of better on-time performance.
- Reduce train running times to attract riders and to provide an efficient service, with travel times directly competitive with the automobile.
- Improve the safety of State-supported intercity rail service, including grade crossing improvements and closures.
- Initiate new cost-effective routes.

Receipt of \$3.1 billion in federal funding is critical to timely implementation of this \$3.7 billion 10-year capital program. Such funding could be provided by passage of proposed rail bond legislation as part of the pending reauthorization of federal transportation funding programs or other proposed legislation. If such federal funding is unavailable, implementation of this capital program will have to be delayed to reflect the level of State funding made available from future STIP programming cycles, as supplemented by any other available funding sources.

Figure 3D shows the constrained 10-year capital program. This program funding level could be achieved if \$60 million a year in STIP funding is made available over the 10-year period (from 2006 through 2014 STIP cycles). This annual amount is less than the average annual STIP funding programmed since 1996. The 1996 STIP provided \$119 million in funding for intercity rail projects, while the 1998 STIP, as augmented, provided an additional \$185 million. However, the 2000 STIP provided \$50.3 million. The 2002 STIP increased funding provided to \$122.3 million. As noted above, no additional funds were made available in the 2004 STIP. The potential availability of federal funding could serve to reduce demands on the ITIP to fund intercity rail projects. Other potential funding sources could include future bond issues and funding from local entities and railroads.

Figure 3D

Constrained 10-Year Intercity Rail Capital Program							
FY 2004-05 through FY 2013-14							
Project Cost (in millions, based on year 2003 dollars)							
Route	Project Development (PE, EIR/S, CM) *	Right of Way	Track & Signal	Stations	Grade Crossings	Rolling Stock & Maintenance Facilities	Total Cost
Pacific Surfliner	\$ 42.9	\$ 5.7	\$ 260.6	\$ 8.9	\$ 5.7	\$ 5.4	\$ 329.2
San Joaquin	\$ 27.8	\$ 0.7	\$ 127.3	\$ 1.4	\$ 13.8	\$ 7.6	\$ 178.6
Capitol Corridor	\$ 10.6	\$ 0.7	\$ 54.4	\$ 10.3	\$ 2.9	\$ 8.2	\$ 87.2
Total	\$ 81.3	\$ 7.1	\$ 442.3	\$ 20.6	\$ 22.4	\$ 21.2	\$ 595.0
* Preliminary Engineering, Environmental Impact Report/Study, Construction Management							

Since the passage of SB 45 in 1997, most intercity rail funding provided by the State has come from projects proposed by the Department from the ITIP, which receives only 25 percent of all STIP funding. The RTIP, for which projects are proposed by the Regional Transportation Planning Agencies (RTPAs), receives the remaining 75 percent of STIP funding. However, as part of the partnership between the Department and the RTPAs, the RTPAs should be expected to provide significant additional resources for intercity rail capital projects.

PROJECTED CAPITAL PROJECTS

The following is a summary of key elements in the projected 10-year capital program (summarized in Figure 3C above) for existing routes:

Pacific Surfliner Route

- New trainsets
- Additional lead track at Los Angeles Union Station
- Third main track Fullerton-Los Angeles
- Second main track (20 miles)
- Facility improvements
- Station improvements
- Additional sidings
- Track realignments
- Cab signals
- Track and signal upgrades
- Roadway/rail intersection improvements
- Right-of-way acquisition
- Environmental studies

Beginning in 2002, the Department, in cooperation with the FRA, CHSRA, Amtrak and regional and local planning agencies, participated in technical studies that analyzed alternatives and opportunities for rail corridor improvements between Los Angeles and San Diego. As part of these studies, the Department and FRA jointly undertook a program level Environmental Impact Report/Environmental Impact Statement (EIR/EIS) to evaluate such potential rail corridor improvements. Completion of the EIR/EIS is planned for Spring 2005. This document will facilitate environmental reviews of specific project improvements under both CEQA and NEPA. This will also make the program of projects eligible for potential federal funding.

In November 2003, the Department released the LOSSAN Corridor Strategic Plan. This Plan discusses the rail corridor improvement concepts, identifies potential environmental issues and documents community concerns. This planning document will be used by the Department and other agencies to progress implementation of specific project improvements. Conceptual project cost estimates will be included in the EIR/EIS.

- Business Plan for Los Angeles-San Luis Obispo

In November 2004, the Department, regional planning agencies, Amtrak, SCRRRA, UPPR and other stakeholders initiated the development of a Strategic Business Plan for the Los Angeles to San Luis Obispo portion of the Route. Similar to the previous Plan for the southern portion of the route (discussed above), the Strategic Business Plan will analyze rail service expansion opportunities, capital projects required to improve rail service and the potential environmental effect that would result from these actions. A series of public workshops and agency meetings will be held to obtain input for rail service improvements and to identify community issues and concerns.

San Joaquin Route

- New trainsets
- Additional mainline track
- Curve realignment
- Signal upgrades
- Siding extensions
- Environmental studies for passenger-only track
- Roadway/rail intersection improvements
- Demonstration train to San Jose
- Right-of-way acquisition

Capitol Corridor

- Station improvements
- New trainsets
- Higher speed switches
- Superelevation on curves
- Additional mainline track
- Track upgrades
- Crossing signal upgrades
- Right-of-way acquisition

HEAVY EQUIPMENT OVERHAUL

In 2001-02, the Department started its heavy equipment overhaul program for its fleet of California Cars and locomotives. The Northern California pool of State-owned equipment includes 78 cars and 17 locomotives, while the Southern California pool of State-owned equipment includes 10 cars. Different components of the equipment need to be overhauled on a cyclical basis. The overhaul cycle varies from two, three, four, six or eight years depending on the component being serviced. Thus, the overhaul program is ongoing, and in each year different cars and components receive an overhaul.

Funding for the overhaul program varies by budget year based on the specific overhauls planned for that particular budget year. The overhaul program has been funded through the Budget Act from the Public Transportation Account (PTA). Article XIX of the State constitution prohibits the use of State Highway Account (SHA) funds for mass transit vehicle acquisition or maintenance. Thus, SHA funds cannot be used for the overhaul program, nor is there any dedicated funding source for the overhaul work needed in the future as the equipment ages.

In 2002-03, the bid was accepted for the first mid-life overhaul of the original 66 cars in the Northern California fleet. Work began in January 2004 and will take four years to complete. In addition, the nine oldest F59PHI locomotives received a mid-life overhaul, which was completed in January 2004. In future years, the newer 22 cars (12 in the Northern California fleet and ten in the Southern California fleet) will need an overhaul. Additionally the remaining eight locomotives will need their mid-life overhaul. Certain specific components are not included in the mid-life overhaul, such as sign-systems and carpet and upholstery, and these activities are contracted for and performed separately.

RAIL-HIGHWAY GRADE CROSSING IMPROVEMENT AND SEPARATION PROGRAMS (STATE AND FEDERAL)

The Department has a number of programs to improve safety at rail-highway grade crossings as well as improve rail and road operations. Locations where a railroad track and a street or road cross each other at the same grade are called rail-highway grade crossings. The Federal Section 1010/1103 Program and the Federal Section 130 Program focus on improving safety and operations at grade crossings. Locations where a railroad track and a street or road cross each other at separate grades are called rail-highway grade separations. The State Section 190 Program focuses on constructing grade separations. The three programs combined receive, in general, approximately \$30 million a year in funds.

Federal Section 1010/1103(c) Railway-Highway Crossing Hazard Elimination in High Speed Rail Corridors Program

Section 1010 of the Intermodal Surface Transportation Efficiency Act (ISTEA) (23 U.S.C. Sec. 104(d)), which was enacted in 1991, provides \$5 million per year for elimination of hazards at railway-highway crossings (when ISTEA was reauthorized in 1998 as the Transportation Efficiency Act for the 21st Century, or TEA-21, Section 1010 was revised as Section 1103[c]). In order for rail corridors to be eligible to compete for Section 1010 funding, they must include rail lines where railroad speeds of 90 mph are occurring or can reasonably be expected to occur in the future. California's existing State-supported intercity passenger rail routes, plus the Coast Route between San Jose and San Luis Obispo, together comprise one of the nationally designated corridors eligible to compete for the Section 1010 funding. Since FY 1992-93, the Department has received \$6.3 million in Federal funds from the program. The Department's Division of Rail uses the Section 1010 funds for improvements in signaling at grade crossings, private grade crossing closures, and other grade crossing safety improvements.

Federal Section 130 Crossing Improvement Program

Section 14036.4 of the Government Code requires the Department to report on the amount of funds available to the State under the Federal rail-highway crossing program (23 U.S.C. Sec. 130), including the cash balance, funds encumbered during the last year, and amounts anticipated to be received during the subsequent year.

Apportionments from the Federal Section 130 Program currently provide about \$10.2 million per year in federal highway funds for grade crossing safety projects. The Department supplements this program with other Federal funds to pay for grade crossing improvements on State Routes. With the supplemental Federal funds, the total statewide financial commitment to grade crossing improvements ranges from about \$13 million to \$15 million per year, with \$10 million allocated to projects to eliminate hazards at rail crossings on local streets and roads and the balance allocated to projects on State Routes. Improvements include the installation of grade crossing safety devices such as flashers, gates, cantilevered flashing lights, constant time warning devices, surface improvements, crossing closures and coordinated traffic signal preemption at crossings.

Figure 3E

Section 130 Federal Crossing Improvement Program Funding Status Federal Fiscal Year 2003-04 – 2004-05 (\$ in thousands)				
Total Apportionment Funds Available on Oct. 1, 2003 (Roll-Over and New Funds)	Cumulative Obligations (Obligations and Deobligations)	Total Unobligated Balance Sept. 30, 2004	Anticipated Apportionments Oct. 1, 2004 through Sept. 30, 2005	Total Apportionment Funds Available on Oct. 1, 2004 (Roll-Over and New Funds)
\$ 11,474	\$ 8,150	\$ 3,324	\$ 9,595	\$ 12,920

The California Public Utilities Commission (CPUC), in consultation with the railroads, the Department and the appropriate State and local agencies, determines proposed improvements and priority order. Based on available funds, the Department selects projects from the prioritized list for inclusion in the Multi-year Section 130 Program Funding Plan approved by the CPUC and the Department.

The program funds 90 percent of the cost of the improvements, including all signal and surfacing work projects. The other 10 percent is usually paid by the local entity responsible for the road or highway involved, generally a city or county. On State highways, the State will pay the 10 percent non-federal share. However, projects involving railroad-protective devices only are 100 percent federally funded. Under federal law, the annual grade crossing improvement program must be included in the Transportation Improvement Programs (TIPs) of the appropriate Metropolitan Planning Organizations prior to obligation of funding.

The Department's Division of Rail administers Section 130 funding for projects involving railroad crossings of both State Highways and local streets and roads. Program staff: develop financing for the construction of eligible projects; ensure that Federal and State law, policies, practices and standards are observed; issue agreements to railroad companies and local agencies; provide follow-up on project delivery for grade crossing projects; monitor Section 130 expenditures; and publish a listing of planned Section 130 projects.

State Section 190 Grade Separation Program

The Section 190 Grade Separation Program is a State-funded safety program that provides for the elimination of existing at-grade railroad crossings. Most projects funded under this program are grade separations. However, consolidations or track removal projects that eliminate grade crossings can also be considered. Eligible projects are identified on the basis of the priority list established by the CPUC. This list is developed every two years, and becomes effective in July of even numbered years. Projects can be nominated by local agencies, railroad companies or the Department. Nominated projects are prioritized on the basis of a

formula that incorporates such factors as traffic volumes (both roadway and railroad), projected state contribution, accident history, and physical conditions at the crossing to be eliminated.

Once the CPUC list has been established, the Department's Division of Rail administers the program. The annual amount of State funding for the program is \$15 million, with a maximum amount of \$5 million per project. In general, the State contribution for any one project is limited to 80 percent of the project cost if the grade crossing to be eliminated has been in existence for at least 10 years prior to the date of allocation of the funds. The railroad must contribute a minimum of 10 percent of the total cost of the project, and the lead agency must cover the rest. (Note: if the lead agency elects to use federal funding for a portion of the project, the railroad contribution requirement is reduced to 5 percent, in accordance with federal regulations.) If the grade crossing to be eliminated has been in existence for less than 10 years prior to the allocation date, the project may receive up to 50 percent State funding, with a 50 percent matching-fund requirement. As above, the railroad must contribute a minimum of 10 percent of the total cost of the project.

The total project cost includes design, right-of-way acquisition, utility relocation, environmental clearance, and all construction elements (structures, approaches, ramps, connections, drainage, etc.) required to make the grade separation operable.

Projects that include multiple grade separations are eligible to receive up to \$20 million if they provide projected cost savings of at least 50 percent to the State and/or local jurisdiction by eliminating the need for future projects, and if they alleviate traffic and safety problems or provide improved rail service not otherwise possible. Such projects are funded over a multiyear period lasting up to five years, with up to \$5 million allocated each year.

Requests for allocations are due to the Department on April 1 of each fiscal year. Within the limits of available funding, allocations are made by the Department, pursuant to a delegation from the CTC, in priority order to all projects that meet the requirements. If a project only receives a partial allocation because of limited funding, it will be automatically eligible for the balance of its funding in the following fiscal year. Projects that do not receive an allocation within the two-year life of the CPUC priority list must be re-nominated in order to remain eligible. Grade separation projects are also eligible for STIP funding.

DECREPIT STATIONS

Section 14036.2 of the Government Code requires the identification of the three most decrepit intercity rail passenger stations in the State used by trains operated by Amtrak. Webster's New World Dictionary, Third College Edition, copyright 1988, defines decrepit as "broken down or worn out by old age or long use."

The following three stations are those identified by the Division of Rail as the three most decrepit.

Dunsmuir (5750 Sacramento Avenue): This station serves Amtrak's Coast Starlight. It is an old building with the paint peeling extensively on the outside. The rain gutters are rusty and deteriorating. One of the walls has a brick section that looks deteriorated. The waiting room has two chairs and the only heater visible is in the restroom.

Madera (Avenue 15½ at 29th Road): This station is a shelter in a residential industrial area. It is unattractive, with only a transit-type bench in disrepair and covered with graffiti. There is no lighting in the shelter or landscaping at the station. The parking lot is paved but deteriorated with many potholes, and many of the lights are broken. Representatives of the City, County, Amtrak and the Department are planning to move the station to a new location. A project study report for the new station was prepared, and the Department has programmed funds for design, right-of-way acquisition and construction.

Needles (900 Front Street): This station serves Amtrak's Southwest Chief. The station is boarded up and fenced off from the adjacent park. Nearly \$1.2 million in State and other funds are available for the planned rehabilitation of the station. Additional funding, however, is needed and is being pursued for the rehabilitation. Under Amtrak's operating agreement, only the platform is used for passenger service at this station.

UPGRADED PARKING FACILITIES

Section 14036.2 of the Government Code requires the identification of those rail passenger stations which require upgraded parking facilities to encourage automobile drivers to utilize available rail passenger service.

Additional parking was recently constructed in conjunction with the building of a new station in Martinez. Parking projects have also been completed in conjunction with the construction of new stations at Bakersfield, Merced and Modesto. At existing stations, additional parking was completed in 2000 in Santa Ana, Oceanside and Auburn. Parking on the Suisun City station was completed in 2004. The design phase has been completed on a parking reconfiguration project at the Sacramento station, with construction to begin in January 2005. Expanded parking is being implemented at the station in Fullerton. The City has acquired land for a further expansion of parking at Oceanside and the Department is pursuing construction funds. Other locations such as Irvine and Solana beach are planning parking expansion projects.

LIFE CYCLE CAPITAL COSTS

Life cycle capital costs are considered to be the total cost, in current dollars, over the useful life of a capital improvement. These costs include initial construction, rehabilitation, renovation, or rebuilding, but do not include normalized maintenance costs. The useful life of a capital improvement ends when replacement of the improvement is more cost effective than its rehabilitation, renovation, or rebuilding. The Department examines useful life to determine if a capital improvement should be upgraded or replaced.

Following are examples of life cycles costs for equipment, station and track projects:

Passenger rail cars have a useful life of 40 years, and receive scheduled heavy overhaul based on manufacturers' recommended intervals. California Cars were purchased in the early to mid 1990s, and these cars should remain in service through approximately 2035.

The useful life of a train station with routine maintenance, rehabilitation, and renovation is 50 years. For example, the Van Nuys Station on the Pacific Surfliner Route was placed in service about 1995. Additional significant improvements, including lengthening of the platform and expansion of parking were completed later. Therefore, this station can be expected to remain in service until about 2045.

The useful life of track projects is highly variable depending primarily on freight train usage based on millions of gross ton-miles of freight per mile. If little freight traffic is present, the life cycle is greatly enhanced.

CHAPTER IV

OPERATIONS AND MARKETING PROGRAMS

This section contains a discussion on Amtrak, the Intercity Rail Operating Program, including a 10-year plan, and the Intercity Rail Marketing Program.

AMTRAK

AMTRAK’S RELATIONSHIP WITH THE DEPARTMENT AND THE CAPITOL CORRIDOR JOINT POWERS AUTHORITY

Section 24101(c)(2) of the Federal Rail Passenger Service Act authorizes Amtrak to operate intercity rail passenger service beyond its basic system services when requested to do so by a state, group of states, or a regional or local agency.

The Department provides operating funding for three intercity rail passenger services, the Pacific Surfliners, San Joaquins and the Capitol Corridor. Amtrak operates all three services under the provisions of Section 24101(c)(2) of the Federal Rail Passenger Service Act. The Department directly administers the Pacific Surfliners and San Joaquins. (Amtrak funds 30 percent of the Pacific Surfliner service as part of its basic system, and the State pays for the remaining 70 percent of this service.) Since July 1998, the Capitol Corridor Joint Powers authority (CCJPA) has administered the Capitol Corridor service under an interagency transfer agreement with the State.

Over the years, the share of service costs (called cost basis) that Amtrak has required states to pay has increased considerably. Between Federal Fiscal Year (FFY) 1992 and FFY 1999 the cost basis increased each year. Under the cost basis starting in FFY 1999, the State paid 100 percent of all variable costs and Amtrak covered all fixed costs. Since FFY 1999, costs have remained fairly constant (when adjusting for increased service). Also, the CCJPA starting in FFY 2000 entered into a fixed price-operating contract with Amtrak for the Capitol Corridor service.

In the fall of 2002, Amtrak informed the State that the cost allocation principle would be “full recovery of costs” as determined by Amtrak’s Route Contribution Analysis (RCA). Costs on this basis actually decreased slightly on the Pacific Surfliners for the same level of service, primarily because the State is no longer charged equipment capital costs for the use of Amtrak owned equipment. State costs are projected to remain constant from 2002-03 through 2005-06. State operating costs have never been constant for such a long period of time in the history of state-supported service.

The Department pays any net operating loss of the feeder buses that serve the State-supported routes. The operating loss consists of the entire bus operating

costs (as billed by the contract bus operator) minus the feeder bus revenue credits. The bus revenue credits represent a proportional share of the passenger's entire rail-bus fare assigned to the bus portion of the trip.

Amtrak, in operating service for the State or the CCJPA in California, performs many functions. Amtrak employees function as train crews and staff stations with ticket offices. The equipment (whether owned by Amtrak or the Department) is maintained by Amtrak staff at Amtrak operated facilities. Amtrak staff located in Oakland and Los Angeles, and to a lesser degree in Washington, D.C. and Philadelphia, performs administrative and other functions related to California State-supported service.

Amtrak maintains control over many operational functions related to State-supported service. For example, Amtrak administers fare policy in accordance with its national goal to maximize revenues. However, the Department and the CCJPA work with Amtrak to develop special California or route-specific promotions. Amtrak also has national service requirements and standards that it maintains. The Department has been successful in working with Amtrak to adapt some of these policies (such as food service) to specific California conditions.

THE FUTURE OF AMTRAK

The Rail Passenger Service Act of 1970 created Amtrak, which started operating on May 1, 1971. According to the Congressional Budget Office September 2003 study *The Past and Future of U.S. Passenger Rail Service* "more than three decades after the Congress and the President created the National Railroad Passenger Corporation, federal policies toward intercity passenger rail service remain unsettled. Policymakers have not been able to agree about whether the company should be a private, for-profit enterprise (like airlines and intercity bus companies) or a public service (like urban mass transit) that would use government subsidies to achieve social objectives."

The 1997 Amtrak Reform and Accountability Act was intended to clarify Amtrak's status and stated the clear intent that Amtrak function without federal operating subsidies; it also re-stated the federal policy that Amtrak operate a national system. In November 2001, the Amtrak Reform Council (ARC), an oversight agency created by the 1997 Act found that Amtrak would fail to achieve operating self-sufficiency by December 2, 2002. This action triggered the requirement that ARC prepare a restructuring plan for Amtrak by February 2002. The ARC restructuring plan recommended that Amtrak be separated into a government-owned infrastructure company, a private operations company, and a federal oversight agency.

In May 2002, David Gunn became president of Amtrak. He quickly acknowledged Amtrak's severe financial condition and consolidated and simplified the company's management structure. In April 2003, Amtrak released

its Amtrak Strategic Plan FY 2004 - 2008. In June 2004, this plan was updated through FFY 2009. Both plans focus on improving the reliability and cost-efficiency of the railroad and take an aggressive approach to bringing track and equipment back to a state of good-repair in order to reverse years of deferred maintenance.

Amtrak's press release for the Amtrak Strategic Plan FY 2005-2009 stated that a series of measures instituted in FFY 2002 had helped to stabilize the railroad's finances and that capital infrastructure projects were at their highest levels in the past 20 years. Amtrak's FFY 2004 ridership was 25.1 million, 4 percent above the prior year, and the highest in Amtrak's history, and financial performance (operating loss) for FFY 2004 was favorable to budget.

The Administration in June 2002 released its five principles for Amtrak reform. These principles are to: create a system driven by sound economics; require that Amtrak transition to a pure operating company; introduce carefully managed competition to provide quality rail services at reasonable prices; establish a long-term partnership between the states and the Federal Government to support intercity passenger rail service; and create an effective public partnership, after a reasonable transition, to manage the capital assets of the Northeast Corridor. These principles have continued to guide the Administration's budget deliberations through FFY 2005.

Federal funding for Amtrak has stabilized somewhat in the last three years. However, funding has been consistently lower than Amtrak's requests. For FFY 2003, Congress approved \$1.05 billion in appropriations and deferred repayment of its \$100 million FFY 2002 loan. While this amount was less than Amtrak's original \$1.2 billion request for FFY 2003, it was significantly more than the Administration's initial budget proposal of \$521 million.

In July 2003, the Administration submitted the "Passenger Rail Investment Reform Act of 2003" (S. 1501) to Congress that embodied the five principles listed above. In August 2003, four Republican Senators, led by Kay Bailey Hutchison of Texas, introduced the "American Rail Equity Act of 2003" (S. 1505) as an alternative proposal to the Administration's bill. S. 1505 significantly increased federal operating and capital support for Amtrak. However, neither legislative proposal moved forward as Congress focused on Amtrak's appropriation level for FFY 2004. The FFY04 final appropriations bill included \$1.2 billion for Amtrak, below the \$1.8 billion requested by Amtrak but enough to continue to operate the national system.

In 2004, Congress was primarily engaged in reauthorizing surface transportation programs and discussions on the future of Amtrak and intercity rail took a back seat. Amtrak's FY 2005-2009 Strategic Plan called for an annual federal appropriations level of \$1.6 billion, which would allow Amtrak to make progress on its goal toward achieving a state-of-good-repair. Amtrak initially requested

\$1.8 billion from Congress for FFY 2005, but revised it downward to \$1.5 billion based on the ability to advance a number of capital projects. In November 2004, Congress appropriated \$1.2 billion for FFY 2005 funding, which includes a \$20 million portion of a five-year repayment for the FFY 2002 loan of \$100 million. In response, Amtrak stated that it would review all capital and operations budgets throughout the fiscal year to make wise investments and ensure the safety and continuation of operations in a budget that falls short of its request. None-the-less, Amtrak states that the 2005 budget will result in the necessary deferment of a number of essential capital investment projects.

KEY ISSUES FOR CALIFORNIA IN AMTRAK DEBATE

The Department is closely monitoring the Federal debate on the future of Amtrak. There are a number of key actions that need to be taken to ensure that intercity passenger rail can continue to successfully operate in California in the event Amtrak is restructured or liquidated.

First, California makes a significant contribution to Amtrak in terms of operating payments, ridership and capital funding. Since 1976, California has provided \$1.8 billion in capital funds for track, signal and station improvements. The total operating payments made by California to Amtrak in 2002 comprised about 55 percent of all such payments. California's ridership on its three State-supported routes in 2004 was 17 percent of Amtrak's total ridership and 44 percent of the ridership on all corridor trains outside of the Northeast Corridor. California needs to ensure that this huge investment is not jeopardized as changes are considered to Amtrak's structure.

Second, the issue of equity in States' payments to Amtrak for intercity rail operating services needs to be monitored. Starting in FFY 2004, all states are now paying for operations on the same "full recovery of costs" basis. This is a very positive step towards all State's making equitable payments to Amtrak for operations costs. However, certain states still do not pay for all or part of the corridor services within their state.

Third, if Amtrak is restructured to embrace competition, a number of significant changes to existing law must be made. States must be able to enjoy many of the exclusive rights Amtrak now enjoys. States should then be able to pass those rights on to a franchise operator. The most important right is the ability to access private railroad right-of-way at incremental costs. Additionally, under any restructuring plan, a federal oversight body must remain in place to ensure the integrity and coordination of the national system. The oversight body would see that the pieces of the system continue to fit together and that shared functions, such as ticketing and reservations continue to be covered.

Fourth, a dedicated, reliable source of federal capital funding is absolutely essential in order to allow the incremental development of high-speed rail service on key corridor routes throughout the nation.

Finally, the impact on corridor routes in California if long-haul routes are discontinued needs to be considered. Almost 100,000 passengers transferred between California's three routes and long-haul trains in FFY 2001, and contributed \$12.1 million in passenger revenue to the long-haul trains. If long-distance trains were eliminated, fixed costs that are now shared between long-haul services and state-supported services would have to be borne entirely by the state-supported routes, to the extent the costs could not be eliminated. The higher fixed costs would be for maintenance facilities, stations, crew bases and Amtrak Western Regional overhead costs. Additionally, the corridor routes would not receive the riders now connecting from the long-haul routes.

COST/BENEFIT STUDY ON CONTRACTING OUT INTERCITY RAIL SERVICES

The Department has initiated a cost/benefit feasibility study on competitively bidding intercity rail to determine if, under current law, competitive bidding could benefit California. The Governor's veto to Item 2660-001-0046 (Budget Act 2001) required the Department to "conduct a study to identify the costs and benefits of competitive bidding for the State's intercity rail services." The study examined the costs and benefits (pros and cons) of using a competitive bid process to determine the operator of State-supported intercity passenger rail services.

OPERATIONS PROGRAM

TEN-YEAR INTERCITY RAIL SERVICES OPERATIONS PLAN

The Department's 10-year operating program was developed in conjunction with Amtrak and the CCJPA, and is shown in the following tables. The Department, in conjunction with Amtrak, developed the frequency levels, ridership projections, revenue, expense and farebox ratios used in Figures 4A, 4B and 4C.

The start-up date projections are for planning purposes only. These projections were developed based on projected service needs. However, the implementation of all new service is subject to demonstrated ridership demand, approval from Amtrak and the relevant railroad(s), availability of operating and capital funding and equipment, and completion of necessary capital projects.

Figure 4A presents actual and projected ridership, service frequencies and best train running times for the three existing intercity passenger rail routes from 2001-02 through 2013-14. Amtrak developed the best train running times for their 20-Year Strategic Plan (discussed in Chapter I).

Figure 4B presents revenue, expense and farebox ratio data for existing routes from 2001-02 through 2013-14, and this data is based on the frequency levels in Figure 4A.

The left portion of Figure 4C provides information on 2001-02 through 2004-05 intercity rail service funding. For 2001-02, 2002-03, and 2003-04, actual costs are shown. Data for 2004-05 is for the current year. The right portion of Figure 4C shows projected service costs from 2005-06 through 2013-14 for existing and new routes. The data for existing routes are based on the frequency levels in Figure 4A and the revenue and expense levels in Figure 4B. Starting in 2006-07, the Department assumes that all new equipment will be leased, and thus lease costs for equipment are included in service costs.

Figures 4D, 4E and 4F graph the State cost per passenger, per passenger mile and per train mile for each of the three State-supported routes.

Figure 4A

RIDERSHIP, FREQUENCIES AND RUNNING TIMES FOR INTERCITY RAIL PASSENGER OPERATIONS
Federal Fiscal Years 2001-02 - 2013-14

	Actual			Current			Projected									
	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14			
RIDERSHIP (thousands)																
Pacific Surfliners (total)	1,725	2,179	2,345	2,491	2,548	2,607	2,750	2,814	2,878	3,034	3,104	3,333	3,503			
San Joaquins	734	783	739	756	773	791	809	828	847	942	964	1,057	1,082			
Capitol Corridor	1,080	1,172	1,165	1,455	1,557	1,658	1,704	1,773	1,835	1,877	1,920	2,251	2,352			
Total Ridership	3,539	4,134	4,249	4,702	4,878	5,056	5,263	5,415	5,560	5,853	5,988	6,641	6,937			
FREQUENCIES																
Pacific Surfliners (total)																
San Diego-Los Angeles	11	11	11	11	11	11	12	12	12	13	13	13	14			
Los Angeles-Goleta	4	4	4	5	5	5	5	5	5	5	5	6	6			
Goleta-San Luis Obispo	1	1	1	2	2	2	2	2	2	2	2	3	3			
Total	11	11	11	11	11	11	12	12	12	13	13	13	14			
San Joaquins																
Oakland-Bakersfield	4	4	4	4	4	4	4	4	4	4	4	5	5			
Sacramento-Bakersfield	2	2	2	2	2	2	2	2	2	3	3	3	3			
Total	6	6	6	6	6	6	6	6	6	7	7	8	8			
Capitol Corridor																
San Jose-Oakland	4	4	4	4	4	4	4	4	4	4	4	4	4			
Oakland-Sacramento	9	12	12	12	12	14	16	16	16	16	16	18	18			
Sacramento-Roseville	1	1	1	1	1	1	1	1	1	1	1	1	1			
Roseville-Auburn	1	1	1	1	1	1	1	1	1	1	1	1	1			
Total	9	12	12	12	12	14	16	16	16	16	16	18	18			
BEST RUNNING TIMES																
Pacific Surfliners ^Δ																
San Diego-Los Angeles	2:38	2:25	2:25	2:10	2:10	2:10	2:10	1:57	1:57	1:57	1:57	1:57	1:57			
Los Angeles-Goleta	2:43	2:30	2:30	2:07	2:07	2:07	2:07	2:04	2:04	2:04	2:04	2:04	2:04			
Goleta-San Luis Obispo	2:19	2:19	2:19	2:12	2:12	2:12	2:12	2:11	2:11	2:11	2:11	2:11	2:11			
San Joaquins																
Oakland-Bakersfield	6:10	6:01	6:01	5:48	5:48	5:35	5:35	5:35	5:35	5:35	5:35	5:35	5:35			
Sacramento-Bakersfield	5:33	5:25	5:25	5:02	5:02	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40			
Capitol Corridor																
San Jose-Oakland	1:03	1:03	1:03	1:00	1:00	1:00	1:00	0:58	0:58	0:58	0:58	0:58	0:58			
Oakland-Sacramento	1:55	1:55	1:55	1:38	1:38	1:38	1:38	1:30	1:30	1:30	1:30	1:30	1:30			
Sacramento-Roseville	0:27	0:27	0:27	0:26	0:26	0:26	0:26	0:25	0:25	0:25	0:25	0:25	0:25			
Roseville-Auburn	0:34	0:34	0:34	0:34	0:34	0:34	0:34	0:34	0:34	0:34	0:34	0:34	0:34			

^Δ - Financial and ridership results reflect less aggressive trip time reductions than "Best Running Times" listed on table.

Figure 4B

REVENUES, EXPENSES AND FAREBOX RATIO FOR INTERCITY RAIL PASSENGER OPERATIONS
Federal Fiscal Years 2001-02 - 2013-14
(Dollars in Millions)*

	Actual			Current			Projected						
	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
REVENUES													
<i>Pacific Surfliners</i> \$	\$ 20.9	\$ 23.1	\$ 24.3	\$ 27.7	\$ 28.7	\$ 29.8	\$ 31.3	\$ 32.3	\$ 33.4	\$ 35.7	\$ 36.9	\$ 41.3	\$ 43.6
<i>San Joaquins</i>	\$ 20.1	\$ 21.0	\$ 21.9	\$ 22.7	\$ 23.4	\$ 24.2	\$ 25.0	\$ 25.8	\$ 26.6	\$ 29.4	\$ 30.4	\$ 32.8	\$ 33.9
<i>Capital Corridor</i>	\$ 12.3	\$ 13.3	\$ 13.4	\$ 16.4	\$ 16.9	\$ 18.3	\$ 20.2	\$ 21.5	\$ 22.2	\$ 22.9	\$ 23.7	\$ 28.0	\$ 29.2
Total Revenues	\$ 53.3	\$ 57.4	\$ 59.6	\$ 66.8	\$ 69.0	\$ 72.3	\$ 76.5	\$ 79.6	\$ 82.2	\$ 88.0	\$ 91.0	\$ 102.1	\$ 106.7
EXPENSES ^Δ													
<i>Pacific Surfliners</i> \$	\$ 39.4	\$ 39.9	\$ 45.3	\$ 48.3	\$ 48.6	\$ 48.8	\$ 51.5	\$ 53.0	\$ 54.6	\$ 58.4	\$ 60.1	\$ 66.5	\$ 71.3
<i>San Joaquins</i>	\$ 46.5	\$ 50.1	\$ 50.0	\$ 50.9	\$ 52.5	\$ 54.0	\$ 55.8	\$ 57.6	\$ 59.4	\$ 67.4	\$ 69.6	\$ 77.5	\$ 80.0
<i>Capital Corridor</i>	\$ 32.7	\$ 36.2	\$ 36.0	\$ 39.7	\$ 40.8	\$ 43.4	\$ 46.3	\$ 47.7	\$ 49.2	\$ 50.7	\$ 52.2	\$ 59.6	\$ 62.2
Total Expenses	\$ 118.6	\$ 126.2	\$ 131.3	\$ 138.9	\$ 141.9	\$ 146.2	\$ 153.6	\$ 158.3	\$ 163.2	\$ 176.5	\$ 181.9	\$ 203.6	\$ 213.5
FAREBOX RATIO													
<i>Pacific Surfliners</i>	53.1%	57.9%	53.6%	57.3%	59.1%	61.1%	60.8%	60.9%	61.2%	61.1%	61.4%	62.1%	61.2%
<i>San Joaquins</i>	43.3%	41.9%	43.8%	44.6%	44.6%	44.8%	44.8%	44.8%	44.8%	43.6%	43.7%	42.3%	42.4%
<i>Capital Corridor</i>	37.7%	36.7%	37.2%	41.3%	41.4%	42.2%	43.6%	45.1%	45.1%	45.2%	45.4%	47.0%	46.9%

\$ - Reflects Revenues, Expenses and Farebox Ratio for state supported 70% portion of service.

Δ - Train operation expense does not include equipment use (capital) costs.

* - In dollars of each year shown.

Figure 4C

FUNDING FOR INTERCITY RAIL PASSENGER SERVICE
Federal Fiscal Years 2001-02 - 2013-14
(Dollars in Millions)*

Costs	Actual			Current			Projected						
	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
SERVICE													
Existing Routes													
State Costs •													
Pacific Surfliners \$	\$ 22.0	\$ 20.9	\$ 21.2	\$ 20.9	\$ 20.2	\$ 19.4	\$ 20.5	\$ 21.0	\$ 21.6	\$ 24.7	\$ 25.2	\$ 28.9	\$ 31.4
San Joaquins	\$ 26.3	\$ 28.6	\$ 28.4	\$ 28.6	\$ 29.3	\$ 30.2	\$ 31.1	\$ 32.1	\$ 33.1	\$ 40.0	\$ 41.2	\$ 48.4	\$ 49.9
Capitol Corridor	\$ 21.2	\$ 22.6	\$ 22.9	\$ 23.6	\$ 23.6	\$ 27.2	\$ 29.9	\$ 30.0	\$ 30.7	\$ 31.5	\$ 32.3	\$ 37.1	\$ 38.4
Total	\$ 69.5	\$ 72.1	\$ 72.5	\$ 73.1	\$ 73.1	\$ 76.8	\$ 81.5	\$ 83.1	\$ 85.4	\$ 96.2	\$ 98.7	\$ 114.4	\$ 119.7
EQUIPMENT-HEAVY OVERHAUL													
STATE TOTAL	\$ 3.2	\$ 5.8	\$ 10.1	\$ 13.5	\$ 13.8	\$ 14.0	\$ 13.8	\$ 9.3	\$ 13.1	\$ 12.6	\$ 13.6	\$ 14.6	\$ 15.6
Amtrak Total (All 3 routes) Δ	\$ 1.1	\$ 1.1	\$ 82.6	\$ 86.6	\$ 86.9	\$ 90.8	\$ 95.3	\$ 92.4	\$ 98.5	\$ 108.8	\$ 112.3	\$ 129.0	\$ 135.3
New Routes													
State Costs													
San Francisco-San Luis Obispo						\$ 7.3	\$ 7.4	\$ 7.5	\$ 7.6	\$ 7.8	\$ 7.9	\$ 13.5	\$ 13.8
Auburn-Reno							\$ 5.3	\$ 5.3	\$ 8.2	\$ 8.2	\$ 8.2	\$ 8.3	\$ 8.4
San Francisco-Monterey								\$ 7.0	\$ 7.1	\$ 7.3	\$ 7.5	\$ 7.6	\$ 7.8
Los Angeles-Indio								\$ 4.1	\$ 4.1	\$ 4.2	\$ 4.2	\$ 8.6	\$ 8.7
Sacramento-Redding									\$ 4.6	\$ 4.6	\$ 4.7	\$ 4.8	\$ 4.8
State Total						\$ 7.3	\$ 12.7	\$ 23.9	\$ 31.6	\$ 32.1	\$ 32.5	\$ 42.8	\$ 43.5
New and Existing Routes													
State Total-New and Existing	\$ 72.7	\$ 77.9	\$ 82.6	\$ 86.6	\$ 86.9	\$ 98.1	\$ 108.0	\$ 116.3	\$ 130.1	\$ 140.9	\$ 144.8	\$ 171.8	\$ 178.8
STATE SUPPORT													
Pacific Surfliners													
Administration	\$ 1.6	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5
Marketing	\$ 2.3	\$ 2.3	\$ 2.3	\$ 2.3	\$ 2.3	\$ 3.8	\$ 3.8	\$ 3.8	\$ 3.8	\$ 3.8	\$ 3.8	\$ 3.8	\$ 3.8
Totals	\$ 3.9	\$ 3.8	\$ 3.8	\$ 3.8	\$ 3.8	\$ 3.8	\$ 3.8	\$ 3.8	\$ 3.8	\$ 3.8	\$ 3.8	\$ 3.8	\$ 3.8
San Joaquins													
Administration	\$ 1.4	\$ 1.3	\$ 1.3	\$ 1.3	\$ 1.3	\$ 1.3	\$ 1.3	\$ 1.3	\$ 1.3	\$ 1.3	\$ 1.3	\$ 1.3	\$ 1.3
Marketing	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5
Totals	\$ 2.9	\$ 2.8	\$ 2.8	\$ 2.8	\$ 2.8	\$ 2.8	\$ 2.8	\$ 2.8	\$ 2.8	\$ 2.8	\$ 2.8	\$ 2.8	\$ 2.8
Capitol Corridor													
Administration	\$ 1.3	\$ 1.3	\$ 1.3	\$ 1.3	\$ 1.3	\$ 1.3	\$ 1.3	\$ 1.3	\$ 1.3	\$ 1.3	\$ 1.3	\$ 1.3	\$ 1.3
Marketing	\$ 1.2	\$ 1.2	\$ 1.2	\$ 1.2	\$ 1.2	\$ 1.2	\$ 1.2	\$ 1.2	\$ 1.2	\$ 1.2	\$ 1.2	\$ 1.2	\$ 1.2
Totals	\$ 2.5	\$ 2.5	\$ 2.5	\$ 2.5	\$ 2.5	\$ 2.5	\$ 2.5	\$ 2.5	\$ 2.5	\$ 2.5	\$ 2.5	\$ 2.5	\$ 2.5
Totals - All Routes	\$ 4.3	\$ 4.1	\$ 4.1	\$ 4.1	\$ 4.1	\$ 4.1	\$ 4.1	\$ 4.1	\$ 4.1	\$ 4.1	\$ 4.1	\$ 4.1	\$ 4.1
Administration	\$ 5.0	\$ 5.0	\$ 5.0	\$ 5.0	\$ 5.0	\$ 5.0	\$ 5.0	\$ 5.0	\$ 5.0	\$ 5.0	\$ 5.0	\$ 5.0	\$ 5.0
Marketing	\$ 9.3	\$ 9.1	\$ 9.1	\$ 9.1	\$ 9.1	\$ 9.1	\$ 9.1	\$ 9.1	\$ 9.1	\$ 9.1	\$ 9.1	\$ 9.1	\$ 9.1
Total - All Routes	\$ 9.3	\$ 9.1	\$ 9.1	\$ 9.1	\$ 9.1	\$ 9.1	\$ 9.1	\$ 9.1	\$ 9.1	\$ 9.1	\$ 9.1	\$ 9.1	\$ 9.1

• - Through 2002-03, costs include payment to Amtrak for use of their equipment on State-supported services. Such payments ended in 2003-04. Starting in 2006-07, lease costs for equipment needed to operate additional frequencies and routes are included.

\$ - Reflects State Costs for state supported 70% portion of service.

Δ - Represents only billed amounts covered by Amtrak through 2002-03. Effective in 2003-04, Amtrak's only contribution includes unbilled amounts such as the Amtrak share of general support, reservations, sales and marketing.

* - In dollars of each year shown.

Figure 4D

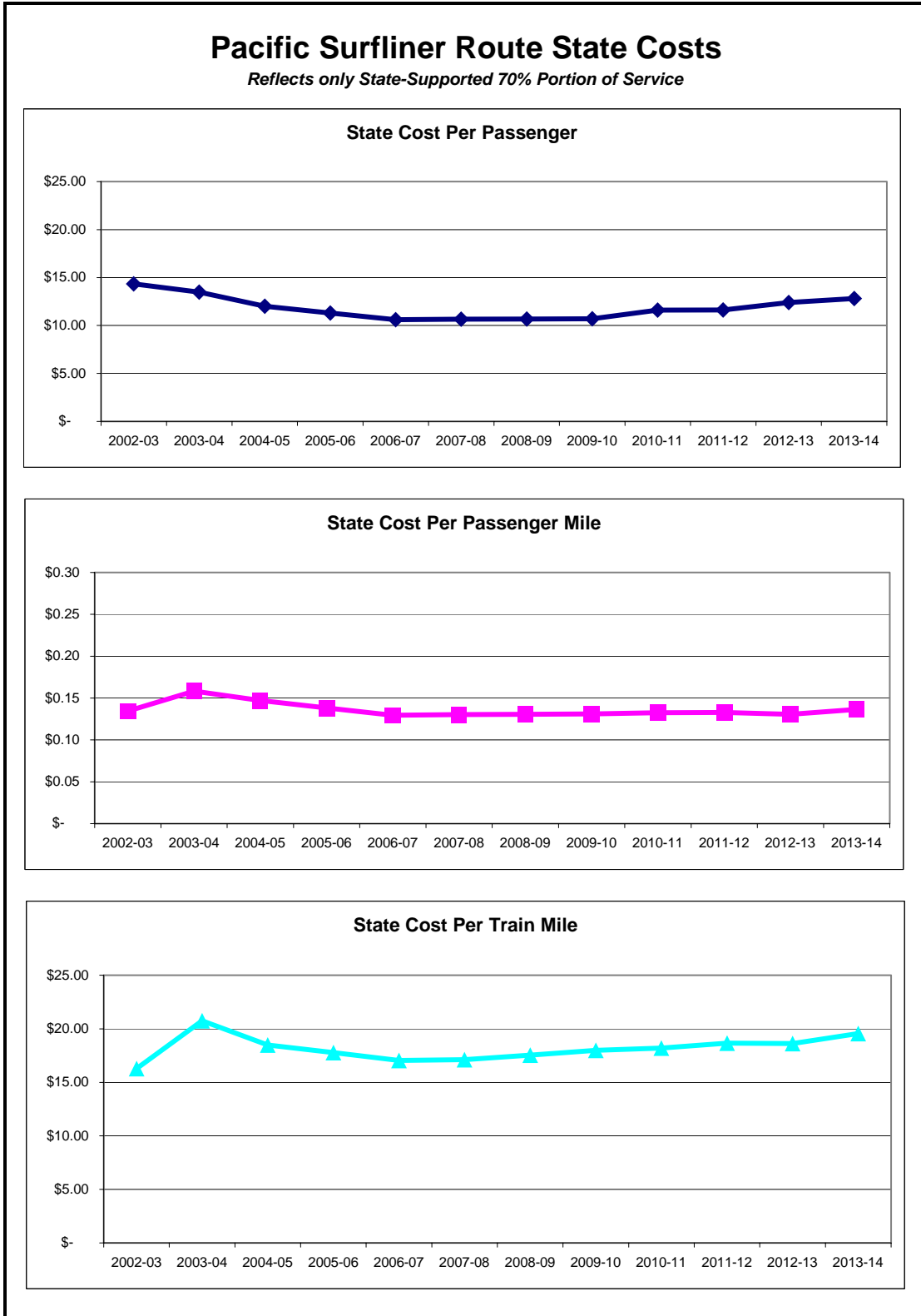


Figure 4E

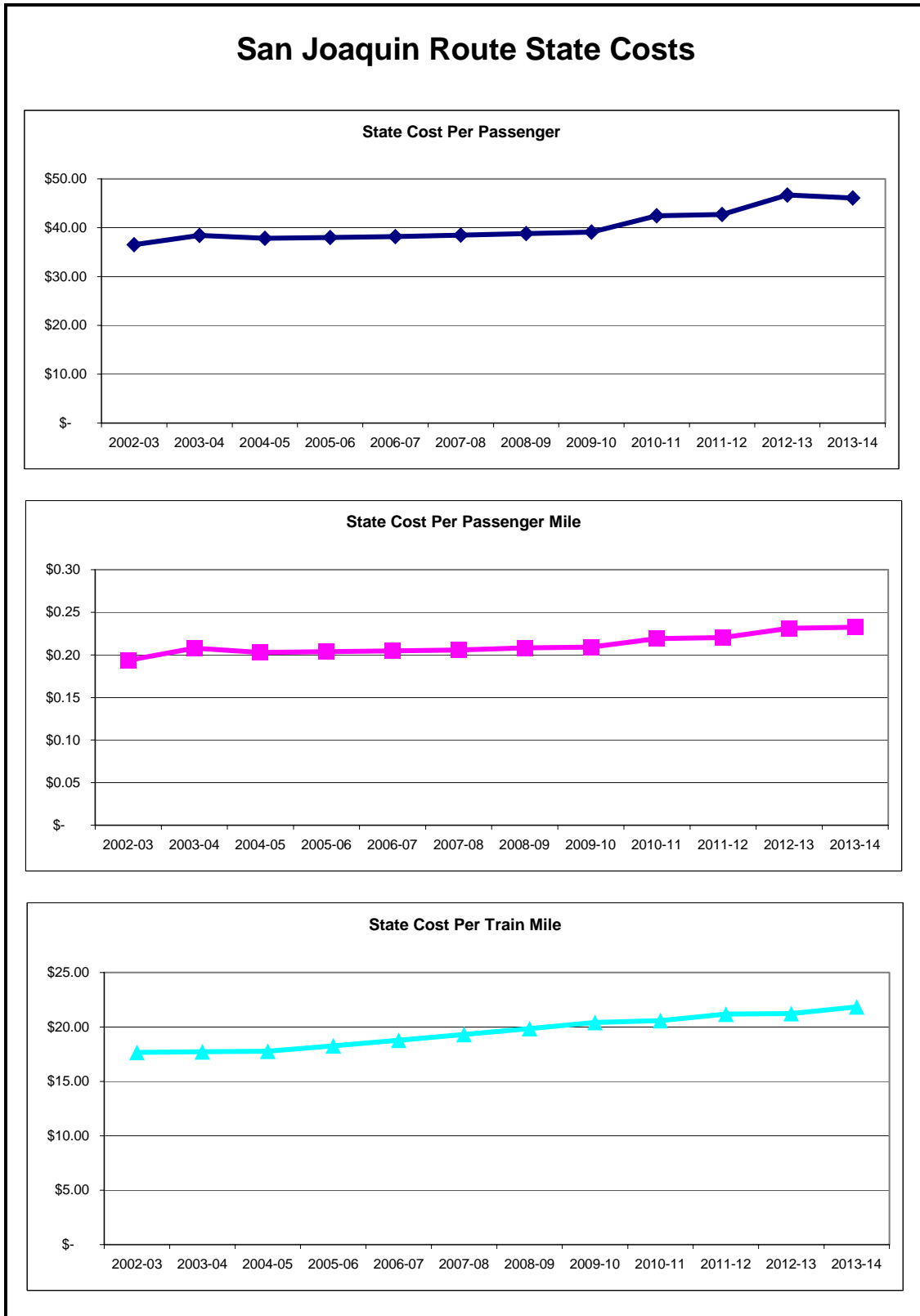
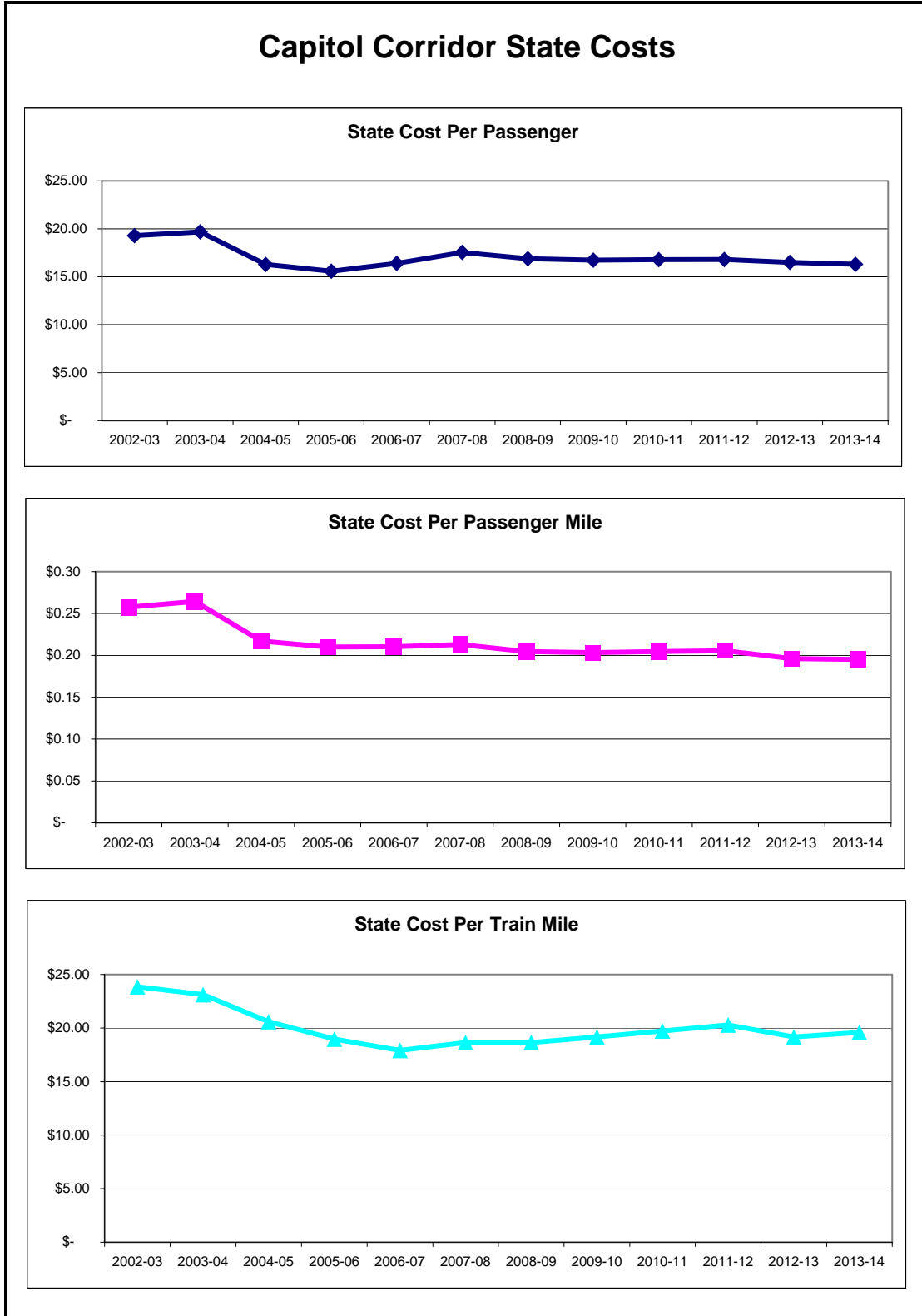


Figure 4F



SHORT-TERM OPERATING STRATEGIES

The focus of the Department's short-term operating strategies is to improve customer service and amenities and increase the cost-effectiveness of the services. These two strategies are complementary, as an improvement in customer satisfaction should increase ridership and revenue.

Train time schedules are reviewed to ensure that they provide optimum flexibility and coverage given the number of round-trips on the route. For example, passengers should be able to make convenient business or day trips to the major urban destinations such as San Francisco, Oakland, Los Angeles, Sacramento and San Diego. On-time service is also important. The Department and CCJPA are working with the railroads and Amtrak to achieve improved on-time performance.

Bus services are reviewed to see if any improvement is possible in bus-train connections and destinations. Strategies to ease the transition between the train and bus, including baggage handling, are being reviewed. Additionally, the program is always striving to improve passenger amenities, including pricing incentives and promotions, food service, baggage handling and reserved seating.

The Department and the CCJPA, in an effort to reduce costs, are closely monitoring Amtrak billed expenses for accuracy. Additionally, the CCJPA has entered into a fixed-price-operating contract with Amtrak.

These strategies for each corridor are detailed in the annual business plans. The Department produces the San Joaquin and Pacific Surfliner plans, while the Capitol Corridor plan is produced by the CCJPA. Corridor business plans for 2005-06 will be published in spring 2005.

SERVICE EVALUATION STANDARDS AND GOALS

The Department's vision for intercity rail passenger service in California is stated at the beginning of Chapter I. To implement this vision, the Department has adopted the following service evaluation standards.

The Department's goal is to provide cost-effective services that will achieve at least 50 percent coverage of costs from the farebox. Our standards for adding or removing services are:

- Where the cost-effectiveness of an existing service will be improved by adding or removing frequencies or segments on the route.
- Where the cost-effectiveness of the State-supported services as a whole will be improved by adding new routes. The relative cost-effectiveness would be compared between potential new routes with the higher-ranking route receiving priority.
- Where the Department has already paid for capacity increases through investment in capital improvements and where others agree to fund capital and/or operating needs.

Within the above standards defining cost-effective service changes, the Department's goal is to have a comprehensive service on the three existing routes that offers enough schedule flexibility to meet a wide range of traveler's needs. On all three routes, the goal is for frequent service (up to hourly as demand requires) during business hours, and adequate coverage for leisure travelers in the evenings and weekends. For service reliability, the goal is 90 percent on-time performance. Chapters V, VI and VII discuss specific expansion proposals for each route.

New routes are proposed for intercity markets that have identified demand and support from local entities for rail service. All proposed new routes would utilize existing rail lines that in almost all cases currently have freight traffic and in some cases have Amtrak service. Chapter VIII discusses each proposed new route in more detail.

The Department's priorities for service increases on both existing and new routes are directly related to the availability of capacity to operate such expanded services. Capacity issues include currently available capacity, and capacity to be obtained by the availability of future capital funding.

PASSENGER SAFETY AND SECURITY

Amtrak began an aggressive campaign during FY 2004 to re-engineer security at Amtrak from the top down. Amtrak created a new executive level position, the Vice President of Security, to manage all security issues and needs. In addition,

Amtrak hired a new Chief of Police to oversee the development of the Police Department in this era of challenging security matters.

The core of the new security focus is to involve all employees, regardless of position, as security is everyone's responsibility. To carry this message, an Executive Security Committee was established to ensure that security issues are discussed and understood by all. Security coordinating committees have been redesigned to include all Amtrak departments. These committees will review and establish security practices and procedures throughout each department and division in concert with Police Department managers. The end product will be a more comprehensive and integrated corporate security program. Initial steps in this area have included the implementation of employee and passenger security alerts and advisories, the issuance of a security handbook to each employee and the ongoing improvement to numerous security programs.

Amtrak continues to have dialogue with congressional committees and executive department agencies on the need for funding for rail security. Therefore, Amtrak has built security improvements into its capital program by including over \$80 million dollars into the five-year plan. Finally, Amtrak will receive some funding for rail security through a recent Department of Homeland Security Appropriations Bill that was passed into law. The specific amount that will go to Amtrak has yet to be determined.

EVALUATION OF INTERCITY RAIL CONNECTING BUS ROUTES

Figure 4G shows the performance of currently operated bus routes for FY 2002-2003 and 2003-2004. The columns headed Net Generated Revenue require an explanation: few connecting bus passengers would use the train if the feeder bus did not exist; therefore, Generated Revenue represents the total bus/train revenue generated by such passengers. The cost of the bus service is deducted from Generated Revenue to determine Net Generated Revenue, which shows the economic impact of the bus service on the rail network in California. Amtrak estimates that, of all bus trips operated, only 2.8 trips per day operated without any passengers, representing 1.2 percent of all trips.

The Department is continually evaluating new Amtrak connecting bus routes, as well as expansions of existing routes, to determine what route changes might increase ridership and improve the financial performance of the service. In evaluating a route, many outside factors that influence ridership, such as economic trends and competing modes, are considered.

All routes with a positive Net Generated Revenue serve to link communities with the train route, and to contribute to the economic success of the rail network.

If a route has a negative Net Generated Revenue, the Department evaluates the reasons for this performance. If the service is relatively new, negative results may occur during its initial growth period. If ridership and revenue continue to

increase, the service will be continued to allow further growth, even though the service is not yet making a positive economic contribution to the rail network. If ridership and revenue do not increase, the service is reviewed for potential withdrawal to allow more effective use of State funding.

Figure 4G

AMTRAK CONNECTING BUS PERFORMANCE						
Bus Route Number	Bus Route End Points	Bus Passengers	One-Way Bus Trips	Passengers per Bus Trip	Net Generated Revenue per Bus Route	Net Generated Revenue per Bus Passenger
July 2003 through June 2004						
1	Los Angeles-Bakersfield	225,781	12,171	18.6	\$ 5,848,176	\$ 25.90
3	Stockton-Redding	97,288	6,815	14.3	\$ 1,602,916	\$ 16.48
4	Los Angeles-Santa Barbara	10,983	737	14.9	\$ 198,382	\$ 18.06
6	Stockton-San Jose/Santa Cruz	51,086	5,125	10.0	\$ 76,243	\$ 1.49
7	Martinez-McKinleyville	37,283	5,904	6.3	\$ (1,103)	\$ (0.03)
9	Bakersfield-Las Vegas	14,876	1,466	10.1	\$ 46,514	\$ 3.13
10	Bakersfield-Santa Barbara	25,159	2,236	11.3	\$ 213,971	\$ 8.50
12	Bakersfield-Palmdale	8,052	1,098	7.3	\$ (19,990)	\$ (2.48)
17A	Santa Barbara-Paso Robles	24,266	3,178	7.6	\$ 293,538	\$ 12.10
17B*	Surf-Solvang	2,480	836	3.0	\$ (9,836)	\$ (3.97)
17C	Paso Robles-San Francisco	18,306	732	25.0	\$ 141,238	\$ 7.72
18	Hanford-San Luis Obispo	14,456	1,470	9.8	\$ (18,349)	\$ (1.27)
19	Bakersfield-Indio	33,485	2,929	11.4	\$ 380,193	\$ 11.35
20A	Sacramento-Nevada City	9,264	3,660	2.5	\$ (173,782)	\$ (18.76)
20B	Sacramento-Reno/Sparks	41,413	3,172	13.1	\$ 333,569	\$ 8.05
20C	Sacramento-Roseville/Auburn	6,119	1,342	4.6	\$ 12,097	\$ 1.98
21A	San Jose - Monterey	4,928	1,190	4.1	\$ (43,268)	\$ (8.78)
21B	Oakland - San Jose	15,575	3,046	5.1	\$ (30,130)	\$ (1.93)
21C	San Jose- Santa Barbara	12,103	976	12.4	\$ 8,395	\$ 0.69
22	San Jose-Santa Cruz	9,282	5,576	1.7	\$ (228,156)	\$ (24.58)
23	Sacramento-Carson City	23,406	5,795	4.0	\$ 95,607	\$ 4.08
33*	Porterville-Fresno	324	256	1.3	\$ (46,056)	\$ (142.15)
34	Stockton-San Francisco	8,995	1,469	6.1	\$ 54,831	\$ 6.10
TOTALS		694,910	71,179	9.8	\$ 8,734,998	\$ 12.57
* Routes 17B and 33 discontinued in September 2003						
Bus Route Number	Bus Route End Points	Bus Passengers	One-Way Bus Trips	Passengers per Bus Trip	Net Generated Revenue per Bus Route	Net Generated Revenue per Bus Passenger
July 2002 through June 2003						
1	Los Angeles-Bakersfield	216,562	13,451	16.1	\$ 5,703,443	\$ 26.34
3	Stockton-Redding	96,502	6,765	14.3	\$ 2,236,768	\$ 23.18
4	Los Angeles-Santa Barbara	10,035	733	13.7	\$ 170,066	\$ 16.95
6	Stockton-San Jose/Santa Cruz	28,472	5,121	5.6	\$ (335,862)	\$ (11.80)
7	Martinez-McKinleyville	39,895	5,868	6.8	\$ 427,564	\$ 10.72
9	Bakersfield-Las Vegas	15,217	1,460	10.4	\$ 78,204	\$ 5.14
10	Bakersfield-Santa Barbara	26,128	2,192	11.9	\$ 439,920	\$ 16.84
12	Bakersfield-Palmdale	7,476	760	9.8	\$ 104,903	\$ 14.03
17A	Santa Barbara-Paso Robles	27,668	4,439	6.2	\$ 368,527	\$ 13.32
17B	Surf-Solvang	1,561	1,474	1.1	\$ (78,639)	\$ (50.38)
17C*	Paso Robles-San Francisco	6,401	398	16.1	\$ 2,618	\$ 0.41
18	Hanford-San Luis Obispo	13,153	1,464	9.0	\$ (38,154)	\$ (2.90)
19	Bakersfield-Indio	34,307	2,921	11.7	\$ 458,812	\$ 13.37
20A	Sacramento-Nevada City	17,446	3,652	4.8	\$ (119,106)	\$ (6.83)
20B	Sacramento-Reno/Sparks	35,937	2,920	12.3	\$ 262,171	\$ 7.30
20C	Sacramento-Roseville/Auburn	5,222	1,462	3.6	\$ 15,174	\$ 2.91
21A	San Jose - Monterey	3,145	1,222	2.6	\$ (88,519)	\$ (28.15)
21B	Oakland - San Jose	17,397	3,832	4.5	\$ (29,709)	\$ (1.71)
21C	San Jose- Santa Barbara	11,010	730	15.1	\$ 21,723	\$ 1.97
22	San Jose-Santa Cruz	25,684	6,938	3.7	\$ (320,390)	\$ (12.47)
23	Sacramento-Carson City	16,365	2,651	6.2	\$ (68,980)	\$ (4.22)
33	Porterville-Fresno	1,701	1,460	1.2	\$ (177,514)	\$ (104.36)
34	Stockton-San Francisco	6,899	1,460	4.7	\$ (49,186)	\$ (7.13)
TOTALS		664,183	73,373	9.1	\$ 8,983,831	\$ 13.53
* Service began on Route 17C in December 2002						

Transit Coordination

A key element of the State's and the CCJPA's management of intercity train services is trying to ensure the maximum possible degree of coordination with commuter and urban rail services. Such coordination serves to enhance ridership on all types of rail services by making the passenger's trip from origin to ultimate destination as convenient and seamless as possible by use of all available rail services.

Passengers can transfer between intercity and other rail modes at many stations. The following are some examples of transfer opportunities.

Joint Stations

- In Southern California, all station stops of the Pacific Surfliner intercity rail service between Oxnard, Los Angeles and San Diego are also served by either Metrolink or Coaster commuter rail service.
- In addition, the San Diego Trolley stops at the San Diego Amtrak station.
- At Los Angeles Union Station, passengers can transfer between the Surfliners, Metrolink and Metro Rail's Gold and Red Lines. The latter connects with the Blue Line to Long Beach downtown.
- Some trips, such as Santa Barbara to San Bernardino via Los Angeles, can best be made by a combination of Amtrak and Metrolink services.
- In Northern California, passengers can transfer between BART and the Capitol Corridor or San Joaquin at Richmond.
- At San Jose, the Capitol Corridor connects with Caltrain and Altamont Commuter Express (ACE) commuter rail services.
- The Santa Clara (Great America) station on the Capitol Corridor is a short walk from the Valley Transportation Authority (VTA) Light Rail line.
- At Sacramento, Regional Transit (RT) light rail is a short walk from the Amtrak station, which is served by both Capitol Corridor and San Joaquin trains. RT plans to extend light rail to the Sacramento Amtrak station.

These stations and most other Amtrak stations in California are served by bus routes operated by local transit districts. The State and CCJPA will continue to pursue and enhance coordination between intercity, commuter and urban rail services, as well as local bus transit.

Joint Ticketing Program

The CCJPA and the Department have implemented a joint ticketing program with local transit agencies. On the Capitols, AC Transit, Sacramento RT, and Central Contra Costa Transit Authority (CCCTA) participate in the program. On the San Joaquins AC Transit, CCCTA, Sacramento RT and Fresno Area Express

participate in the program. The Department is working to add other transit agencies in the Central Valley to the program.

In Southern California, Metrolink and Amtrak have completed the initial phase in the implementation of ticket machines capable of selling Amtrak and Metrolink tickets between all Metrolink and Pacific Surfliner stations. The system is undergoing final design and testing, and is planned to be in the initial phase of operation by 2005-06. The new vending machines will make through trips between Surfliner and Metrolink origins and destinations much more convenient. The Department also intends to continue incremental efforts to make schedules connect and market Metrolink-Amtrak through service.

“Rail 2 Rail” Program

The Rail 2 Rail Program that was introduced on September 5, 2002, began an era of dramatically improved interconnectivity between intercity and commuter rail and increased mass transportation mobility in Southern California. The ultimate goal of the Program is to coordinate schedules, ticketing and fares between Amtrak and Metrolink and Coaster. The first phase of the Program involving Metrolink and Amtrak allowed Amtrak ticket holders and Metrolink monthly ticket holders (for the Orange County and Ventura County lines) to have access to both Amtrak and Metrolink trains within the geographical limits of their tickets. Then, starting April 1, 2004, the Program was expanded to the Coaster, where Amtrak ticket holders and Coaster monthly ticket holders have access to both Amtrak and Coaster trains between Oceanside and San Diego.

This Program has been a breakthrough in the implementation of a truly “seamless” rail system in southern California. Today over 25,000 Metrolink monthly ticket holders and 5,000 Coaster monthly ticket holders a month take advantage of the Program to ride Amtrak trains. Pacific Surfliner ridership jumped 16 percent between 2001-02 and 2002-03, and 14 percent between 2002-03 and 2003-04, mostly due to the Rail 2 Rail Program. This is a phenomenal ridership increase for a long-established service, (32 percent increase between 2001-02 and 2003-04) with no increases in train frequencies.

The next step in coordination between Amtrak and Metrolink will involve through ticketing between the two operators when new ticket vending machines are installed in 2005-06. For instance, a passenger will be able to purchase a through ticket at the Amtrak station in Santa Barbara for travel on the Pacific Surfliner to Los Angeles, and then on to San Bernardino on Metrolink. Conversely, passengers will be able to purchase tickets from the Metrolink ticket machine in Lancaster that will take them to Los Angeles on Metrolink, and then on to San Diego on Amtrak.

AIRPORT ACCESS

Section 14036.7 of the Government Code requires that the Department report on the status of all existing intercity rail station facilities that serve airports directly and indirectly and on the Department's activities in improving other linkages between rail service and airports.

Amtrak and Metrolink trains provide direct rail service to the Burbank - Bob Hope Airport (BUR) station in Burbank. The station integrates airport shuttles, Amtrak trains and feeder bus service, Metrolink trains, and local transit service. Currently, five daily round-trip Pacific Surfliners and 13 weekday Metrolink round-trip trains serve this station.

San Diego Transit offers direct bus service from the San Diego Amtrak Station to the San Diego International Airport (SAN) terminals. Bus service connects all of the 11 daily Pacific Surfliner trains, and 11 weekday Coaster trains with the airport via a 10-minute trip.

In Northern California, the CCJPA is currently planning access to Oakland International Airport (OAK). The new Amtrak intercity rail station, scheduled to be opened in Spring 2005, will be one block from the BART Coliseum/Oakland Airport Station, and will have a direct pedestrian connection to the BART station. AirBART bus service and local transit connects the BART station to the airport terminals. Capitol Corridor and San Joaquin train riders can access San Francisco International Airport (SFO) by a direct connection at the Richmond Amtrak station with BART service to its new SFO station. That station is linked to each terminal by the AirTrain shuttle.

MARKETING PROGRAM

BACKGROUND

The Department expends \$5 million annually on intercity rail marketing. Amtrak supplements the Department's annual budget with an additional contribution for media advertising, which in 2003-04 was \$1.2 million. Amtrak contributed \$800,000 of this for the Pacific Surfliners, with \$200,000 each going to the San Joaquins and the Capitol Corridor. Amtrak plans similar California advertising expenditures in 2004-05 and 2005-06.

The CCJPA and the State have agreed that \$1,173,800 of State funds annually goes to the CCJPA for marketing. Together with the Amtrak advertising supplement, \$1,373,800 is available for the Capitol Corridor.

The balance of \$4,826,800 (\$3,826,200 in State funds and \$1 million in Amtrak funds) is expended on marketing for the San Joaquins and Pacific Surfliners. Typically, media advertising receives about \$3.8 million of this and the remainder, approximately \$1 million, is divided between public relations, rail safety, passenger information, and market research.

As service improvements, such as increased frequencies and reduced running times, are made possible by the Department's ongoing capital improvement program, the long-term marketing strategy will focus on these improvements and the new markets they create. The Department's requests for new services will be accompanied by requests for resources to reach new markets. These new markets will be tapped through both media advertising and public relations efforts. The Department's success at implementing and marketing service improvements that make the train more closely competitive with the automobile, or that even provide better service in some instances, will result in significant ridership and revenue gains.

PACIFIC SURFLINER AND SAN JOAQUIN ROUTES – 2004-05

The primary marketing objectives that will be implemented for the 2004-05 fiscal year are:

- To establish a position for California train travel in consumers' minds. Research shows that most California travelers do not even consider rail when making travel decisions. Rather, most automatically choose their automobiles. Part of advertising's mission is to establish rail as worthy of consideration as an alternative transportation mode. To do this, it must be shown to be a fun, easy-to-use option, relevant to travel needs - in short "Travel made Simple."

- Emphasize Amtrak’s everyday low fares and implement fare promotion campaigns to increase price-sensitive ridership, as appropriate.
- Develop ridership in specific target markets, such as seniors, families, Hispanics, and secondarily business travelers and college students.
- Promote major recent improvements to the corridors and the opening of new stations.
- Work with cities and other local agencies to identify special events such as festivals, conventions, and sporting events whenever train travel can be a viable transportation option and then include train information in event brochures and information packets.
- Coordinate with local business, chambers of commerce and convention bureaus to promote use of the train.

CAPITOL CORRIDOR – 2004-05

According to the CCJPA’s *Business Plan Update*, "The CCJPA strives to combine grassroots local marketing partnerships with broad-based joint media promotions to build awareness and use of the Capitol Corridor. Marketing dollars and impact are maximized through the development of joint promotions with the State, Amtrak, CCJPA member agencies, and other partners." The following initiatives will be pursued in 2004-05 to accomplish these goals:

Corridor-Wide Cross-Promotional Marketing Efforts – Develop major media campaigns to inform leisure travel and business travel markets about service expansions/improvements and special events and destinations/attractions. Activities include:

- Purchase outdoor billboard ads along the I-80 and I-680 highway corridors.
- Place newspaper and radio ads in major markets throughout the Capitol Corridor service area.
- Develop major media campaigns to promote the Capitol Corridor train service in association with popular destinations and events such as Oakland Raiders games and the Oakland-San Jose track improvement program groundbreaking.
- Co-sponsor joint ads and promotions with Amtrak and the Department to achieve cost efficiencies in marketing both the Capitol Corridor and San Joaquin service. Ads target feeder bus stops at high traffic destinations such as Marine World, Pier 39, and the California State Fair.

Ongoing Programs – These marketing initiatives are designed to increase ridership and enhance Capitol Corridor distinctiveness and visibility:

- To boost midday and midweek travel, the Train Treks program provides discounted rates to students traveling on school or youth group field trips.
- The Trial Ride Program offers free round trip trial rides to potential business travelers, primarily through the Capitol Corridor’s employer network. Trial Ride coupons can also be used as prizes at community events.
- Rider Appreciation Days are quarterly appreciation events for passengers on select segments with prizes, snacks, and music. These events also serve to promote the Capitol Corridor’s current programs.
- “Relax and Ride” Onboard Massage Therapy program offers free neck and shoulder massages on Rider Appreciation Days.
- Wi-Fi internet access is now offered onboard select cars as a pilot program.
- The Strategic Partner Program identifies opportunities for partners to market their services/products through Capitol Corridor marketing channels, and create metrics to enhance CCJPA’s trade promotions negotiations.
- The Logo Merchandising Program develops merchandise such as caps, shirts and tote bags with the Capitol Corridor logo to enhance brand awareness.
- Evaluate a program to reward Capitol Corridor’s loyal riders.

Rail Safety – Continue involvement in safety issues that concern rail passenger trains and stations. Working with Amtrak and the Department, the CCJPA will provide initiatives supporting the California Operation Lifesaver program of rail safety through education, engineering and enforcement. Operation Lifesaver is a voluntary organization of railroads, safety experts, law enforcement, public agencies and the general public.

ADVERTISING

Since 1995, the Department and Amtrak have combined resources to create a single advertising program for California services. In October 2004, the Department renewed a two-year contract with Glass-McClure Advertising of Sacramento for 2004-05 and 2005-06. Contract services include strategic planning, media planning, production and creative services, and media buys. By design, Glass-McClure’s agreement with the Department maximizes the State’s commitment to rider-producing media by paying a lower-than-standard commission rate on media buys. Also, no mark-up is paid for production or creative work.

A detailed plan has now been formulated for the 2004-05 fiscal year. This was done in conjunction with Amtrak. The plan includes two seasonal fare promotion campaigns, including coordination with Amtrak's national campaigns. The plan also continues a successful strategy of targeting constituent groups with high likelihood of riding the train. This means that Hispanics, the mature market, business travelers and families will be targeted with campaigns and media addressing their particular travel needs.

Since 1996, the Department's advertising has focused on the virtues of train travel. The latest version of this approach uses the "Travel made Simple" concept for Amtrak California. In executing this positioning, the advertising strategy combines an emotional element reflecting train travel as a unique experience with price and destination messages. This overall advertising appeal will be adjusted when tailoring messages for each of the different targets listed above.

PUBLIC RELATIONS/OUTREACH

The public relations/outreach program is a personal and hands-on aspect of the advertising program designed to work in conjunction with and support advertising efforts. This allows for a customized, corridor-specific program to be constructed from an array of the following activities.

Special Promotions - Promotions have the advantage of using a tailored message to spotlight aspects of service of particular appeal to a corridor audience. Promotions will continue to include ticket giveaways in conjunction with media buys on local radio stations; arrangements with destinations that may include overnight accommodations and tickets to a special event/theme park; and a variety of cooperative efforts with well known promotional partners. These partnerships offer the chance for both parties to obtain exposure for their products while sharing an audience and the cost of that exposure. In 2003-04, Amtrak California partners included Holiday Inn, Sea World, Yosemite, Disneyland Resort and the Oakland Raiders. An Amtrak-arranged promotion includes sponsorship of selected college and professional sports teams whose team demographics coincide with potential train riders. This promotion is done without cost to the state. As part of this, the Amtrak California train message is communicated to sports fans in new and previously unused advertising media.

Media Relations - The contractor conducts press tours, produces press kits for special events, conducts media familiarization trips, and otherwise generates travel and rail-related articles for publication. These activities are coordinated with Amtrak, the Department's Public Information Office and district offices where appropriate.

Printed Materials - Each quarter, the contractor produces Making Tracks, the on-board rider newsletter, and prints approximately 30,000 for distribution in station racks and by mail statewide. The contractor also produces collateral pieces

such as flyers and coupons on demand that are designed to highlight various aspects of the service. Examples of these are posters promoting San Joaquin trains, a brochure advertising special packages to Yosemite, rack cards for special events and the San Joaquin Route guide.

Special Events - In any given year, as State-sponsored rail facilities and services have grown, ceremonial events marking this growth have been staged under the public relations banner. Such events introduce potential Amtrak customers to the product, but they also generate important free publicity that is frequently more effective at reaching an audience than paid advertising. Each of these service changes affords the opportunity to stage an appropriate special event to the program's marketing benefit. The Department works with Amtrak to organize these events.

PASSENGER INFORMATION

Using staff from the Division of Rail, the Department produces informational materials designed to inform customers about routes, schedules, fares, connecting buses and other Amtrak services. Passenger information devices include printed materials, signage, an internet web site, and telephone information.

Printed Information – The Department produces two sets of printed materials for each route, the State Operating Timetable and the Amtrak California Timetables. The operating timetable is designed primarily for internal use by Amtrak's reservation sales agents, station agents and bus operators. It is the official reference document, covering routes and schedules for Amtrak California trains and buses, although it also covers national system trains serving the West Coast and selected non-Amtrak rail services in the State. For the public, the Department produces the Amtrak California Timetables folder for the Pacific Surfliners and San Joaquins and the CCJPA produces the Capitol Corridor timetable. About two million timetable folders are handed out each year. This is expected to continue in 2004-05.

Signage – Each of the 150 bus stops in Amtrak California's feeder bus network is signed with up-to-date route and schedule information compiled, installed and maintained by the Department. The information is generally contained on information inserts placed in long metal signs marking the stops called infoposts. (Usually, these are supplemented by signs in Amtrak California colors reading "Bus Stop.") These inserts must be redesigned and reinserted at every schedule change. Emulating what has become a service standard for the buses, Amtrak and the Department have developed similar standard information displays at train stations. In conjunction with this effort, the Department is pursuing consistent deployment of pathfinder signs, directing automobile drivers from adjacent State highways and local roads to Amtrak stations. Although some of these kinds of signs already exist, many are outdated, worn out, damaged, or no longer provide

correct information. Since 1999, the Department has been installing new signs on State highways pointing to train stations on all three State-supported routes. The Department places signs along local streets and roads in coordination with local agencies.

The Internet – In 1996, the Department established its Amtrak California web site, www.amtrakcalifornia.com. Now one of the Department's most frequently visited sites, www.amtrakcalifornia.com contains information about fare promotions and discounts, Amtrak California news, an easy-order publications page, downloadable timetables and Kids 'N Trains information, general background information about Amtrak California, and the Amtrak California Rail Safety Program. It also contains local information to aid trip planning, including station information, local transit information and links to local transit operators.

The Amtrak California website has direct links to websites for our transportation partners, visitor and convention bureaus, national parks, tourist venues, and major travel origins/destinations. The Amtrak California website provides direct links to Amtrak's national web site, www.amtrak.com for general information, www.tickets.amtrak.com for on-line reservations and ticket purchase for all Amtrak trains, and Amtrak tour and vacation package information is located at www.amtrakvacations.com. The Amtrak California website also has a direct link to our partner the CCJPA's web site, www.amtrakcapitols.com.

The website is currently being redesigned to be more useful to the user including: quicker downloads, airport access information, additional transit information, and additional information on Kids N Trains and senior travel.

Telephone Information – Amtrak's national telephone information number, 1-800-USA-RAIL, is the most widely used source of information for Amtrak California customers. Amtrak has converted all calls within California's major markets to a Voice Response Unit (VRU) automated system designed to eliminate inaccuracies and cut costs. As a result, complaints about routine errors have dropped significantly.

Real-Time Passenger Information – Real time passenger information systems are being developed for implementation on all three State-supported intercity rail corridors. These systems will provide passengers at both staffed and unstaffed stations with real time information on train status: current date and time, train number and track location, arrival and departure time delays. In November 2003, the CCJPA completed installation and testing of the system covering its route. The San Joaquin Corridor, which shares both equipment and a number of stations with the Capitol Corridor, will have the systems installed at all stations by Spring 2005. The Department is working with the Southern California Regional Rail Authority (Metrolink) and Amtrak to develop a system that accommodates real-time train status information for the users of both systems on the Pacific Surfliner corridor.

RAIL SAFETY CAMPAIGN

Rail passenger service expansion in California has meant significantly increased traffic along largely privately owned railroad tracks. To help ensure that the increase occurs without a corresponding increase in hazard, the Department budgets \$70,000 annually toward rail safety information and education programs. These dollars are used to erect warning signs near schools adjacent to railroad tracks; to develop safety programs designed to educate Californians on the dangers of trespassing on rail rights of way and ignoring grade crossing warning devices; and to conduct public service advertising campaigns on these subjects. Approximately \$20,000 of the budgeted amount is part of the advertising contract. The remainder is financed by non-contract advertising dollars. The CCJPA also participates in safety activities with the Department.

The Department coordinates its rail safety activities with California Operation Lifesaver, the State affiliate of the national nonprofit organization. The State organization is a coalition of railroads; federal, State and local agencies (such as the FRA, the CPUC, local police organizations and transit operators); and private businesses and individuals concerned about promoting safety. The Department is a member of the California Operation Lifesaver Board of Directors. Their major focus is encouraging safe behavior at railroad grade crossings and discouraging, for safety reasons, trespassing on railroad property.

MARKET RESEARCH

The Department contracts with Amtrak for \$500,000 per year in market research services. With the Department's participation, Amtrak contracts with various market research firms to measure customer attitudes, desires and preferences in order to match services to customer needs. Past market research has included seasonal on-board surveys; telephone surveys of non-users; license plate surveys to obtain data for ridership, modeling, and advertising; and promotion tracking studies. In addition, each year's research plan includes a contingency fund designed to conduct spot research on subjects that arise during the course of a given year. In this category, the Department and Amtrak conducted research on timetable formats that resulted in a redesign of the State's public timetable folders. Customer attitudes about the San Diegan brand name and its possible replacements were also solicited. This branding exercise resulted in the new name for the San Diegan corridor, the Pacific Surfliner.

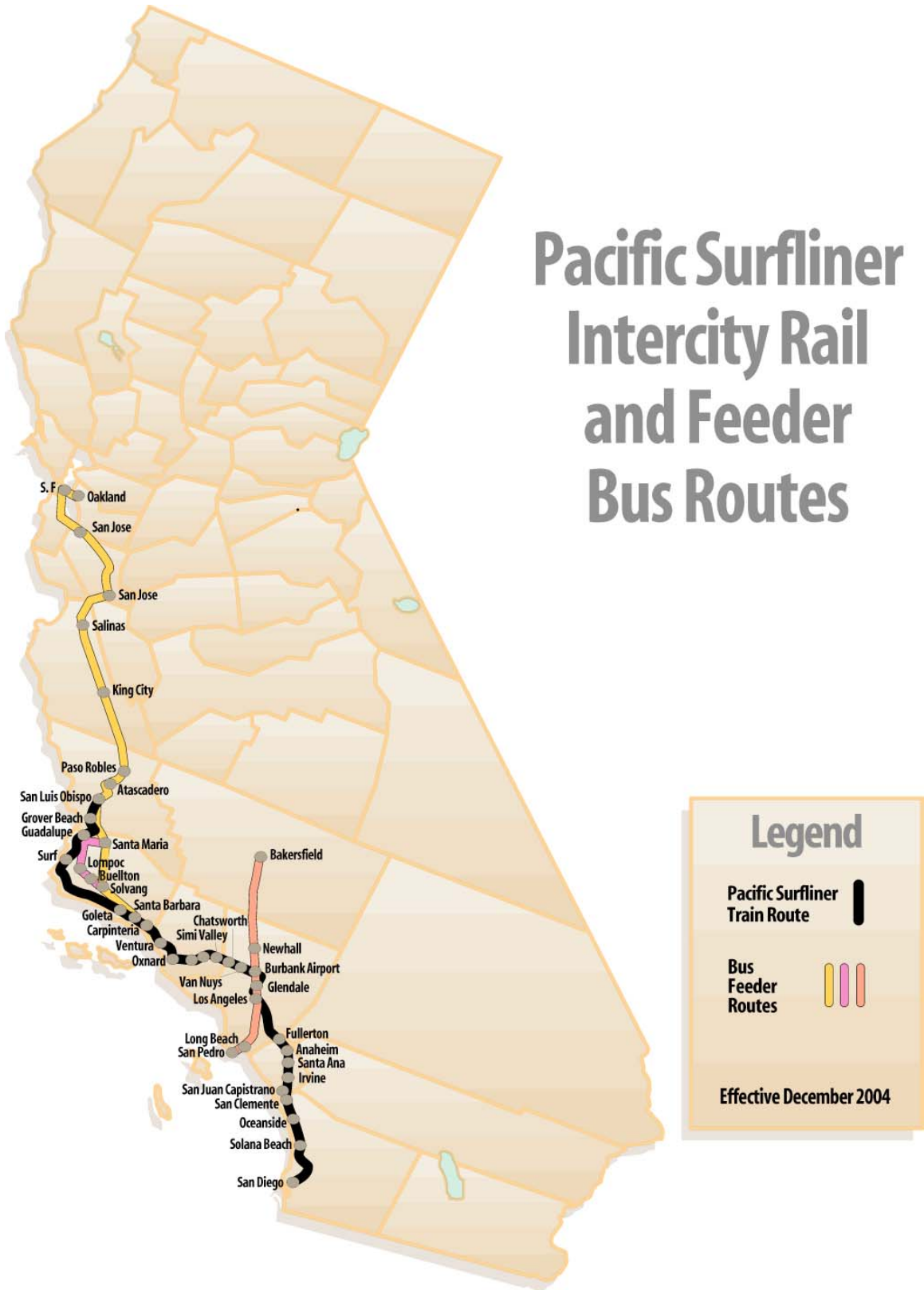
In 2001-02, the Department examined alternative family fare structures, participated in Amtrak's Pacific Coast Market Study and conducted research into the usage of the California Rail Pass. In 2002-03, the Department studied the Surfliners' Pacific Business Class, surveyed Metrolink users of the "Rail 2 Rail" program and performed the Pacific Surfliner parking analysis.

RAIL RIDERSHIP/REVENUE FORECASTING MODEL

The Department contracts with Amtrak for operation and development of the Rail Ridership/Revenue Forecasting Model. It is used by the Department, Amtrak and CCJPA in conjunction with Amtrak's consultant, AECOM Consulting Transportation Group to estimate the ridership and revenue impacts of major service changes, such as new services, route extensions or truncations, frequency changes and fare changes.

The first stage of the model predicts automobile and rail travel volumes for each origin-destination pair. The second stage predicts the share of intercity travel that is expected to use each available modal alternative (automobile, rail) in the future. Both model stages are conditional on the characteristics of the modal services to be offered and the characteristics of the population. Further information is given on the forecasting model in *Development of Techniques for Forecasting Intercity Rail Travel within California, December 2000*.

Figure 5A



CHAPTER V PACIFIC SURFLINER ROUTE

SAN LUIS OBISPO-SANTA BARBARA- LOS ANGELES-SAN DIEGO

PRINCIPAL 2003-04 to 2013-14 ROUTE OBJECTIVES

- Increase annual ridership 49 percent, from 2,345,000 to 3,503,000 passengers.
- Increase annual revenues 79 percent, from \$24.3 to \$43.6 million, for the State-supported 70 percent of the route operation.
- Increase revenue/cost (farebox) ratio from 53.6 percent to 61.2 percent.
- Increase frequency of daily round-trip service, from 11 to 16 trains between Los Angeles and San Diego, and from 5 to 6 between Los Angeles and Santa Barbara/Goleta, and from 2 to 3 trains extended beyond Goleta to San Luis Obispo.
- Reduce train-running times to less than two hours between Los Angeles and San Diego, two hours between Los Angeles and Santa Barbara/Goleta and two hours between Santa Barbara and San Luis Obispo.
- Improve the reliability (on-time performance) of trains.
- Provide real-time information to passengers on train status (e.g., anticipated arrival time), particularly at unstaffed stations.

BACKGROUND

Amtrak was created in 1971 to revitalize passenger rail service. Its San Diegan Route, operated on tracks owned by Atchison Topeka and Santa Fe Railway (ATSF) between Los Angeles and San Diego. These trains functioned primarily as a connection to long-haul trains, as opposed to a local transportation network for passengers traveling within the corridor. By the end of 1971, service was three daily round trips, and remained at this level until State involvement began in 1976.

The segment north of Los Angeles to Santa Barbara and San Luis Obispo, on the Southern Pacific Transportation Company (SP), was served by a daily train between Los Angeles and Oakland, with this train operating through Oakland to Seattle three times per week. This train was eventually named the Coast Starlight. No local train service operated north of Los Angeles until 1988.

In 1988, the San Diegan Route was extended to Santa Barbara with a further extension to San Luis Obispo in 1995. The route was renamed the Pacific Surfliner in recognition of its expanded service area. A second round-trip between Los Angeles and San Luis Obispo was added on November 17, 2004.

The Pacific Surfliner Route is unique among State-supported routes in California because some individual trains were entirely supported by Amtrak, since they were part of their basic system. However, the State paid most of the costs of the other trains, which were considered State-supported service. In October 1995, the cost allocation system changed and the State began support of 64 percent of all service, instead of supporting individual trains. This support level increased to 70 percent in November 2004.

Service on the Pacific Surfliners between Los Angeles and San Diego increased from the original three round-trips to the current level of eleven round-trips on Monday through Thursday and twelve round-trips on Friday through Sunday as follows:

- 9/1/76 Los Angeles-San Diego, fourth round-trip added, State-supported.
- 4/24/77 Los Angeles-San Diego, fifth round-trip added, State-supported.
- 2/14/78 Los Angeles-San Diego, sixth round-trip added, State-supported.
- 10/26/80 Los Angeles-San Diego, seventh round-trip added, Amtrak basic system.
- 10/25/81 State-supported Spirit of California Los Angeles-Sacramento round-trip overnight train provided Los Angeles to Santa Barbara service. Service discontinued October 1, 1983.
- 10/25/87 Los Angeles-San Diego, eighth round-trip added, State-supported.
- 6/26/88 First train extended to Santa Barbara, State-supported.
- 10/28/90 Second train extended to Santa Barbara, State-supported.
- 10/25/92 Los Angeles-San Diego, ninth round-trip added, Amtrak basic system.
- 2/1/94 Third train extended to Santa Barbara, State-supported.
- 5/15/95 Los Angeles-San Diego, ninth round-trip discontinued.
- 10/29/95 Los Angeles-San Luis Obispo, first round-trip (fourth round-trip, Los Angeles-Santa Barbara).
- 10/26/97 Los Angeles-San Diego, ninth round-trip restored and tenth round-trip added.
- 10/25/98 Los Angeles-San Diego, eleventh round-trip added.

- 5/21/01 Los Angeles-San Diego, twelfth Friday through Sunday round-trip added.
- 11/17/04 Los Angeles-San Luis Obispo, second round-trip added (fifth round-trip, Los Angeles-Santa Barbara).

Figure 5A is the Pacific Surfliner route map, including the connecting bus services.

ROUTE DESCRIPTION

The Pacific Surfliner Route extends 351 rail miles between San Luis Obispo and San Diego (222 miles north of Los Angeles and 129 miles south of Los Angeles). To facilitate the implementation of commuter rail service, regional and local agencies in Ventura, Los Angeles, Orange and San Diego counties purchased (from the Southern Pacific and Santa Fe railroads) most segments of the rail line between Moorpark and San Diego. The UP continues to own 175 miles of line between San Luis Obispo and Moorpark. The BNSF owns 22 miles between Redondo Junction in Los Angeles and Fullerton. Figure 5B describes the current ownership, segment mileage, and track and signal characteristics of the Pacific Surfliner Route.

Scheduled running time between Los Angeles and San Diego varies from two hours thirty-eight minutes to three hours. Overall average speed, including station dwell time, varies from 43 to 49 mph. This segment includes more than 70 miles between Santa Ana and Sorrento where the maximum track speed is 90 mph, the only location on the State-supported routes where trains operate above 79 mph. Scheduled train running time between Los Angeles and Santa Barbara varies from two hours thirty minutes to two hours fifty-six minutes. Overall average speed varies from 32 to 39 mph. Scheduled running time for the one Pacific Surfliner round-trip between Santa Barbara and San Luis Obispo is two hours thirty-six minutes southbound to two hours fifty-seven minutes northbound. Overall average speed is 49 to 39 mph respectively.

CONNECTING BUS SERVICES

The Pacific Surfliner Route has a smaller network of connecting buses than either the San Joaquin or Capitol Corridor routes. Nonetheless, the Pacific Surfliner buses provide an important extension to this route. In the past, some of these buses were precursors to rail service, such as when only buses operated between Los Angeles and Santa Barbara; eventually most of these bus frequencies were replaced by direct train service. The Department contracts with Amtrak to provide connecting feeder bus services. Amtrak, in turn, contracts with private bus operators. The bus routes function as direct parts of the Amtrak system with coordinated connections, guaranteed seating, integrated fares and ticketing

procedures, and inclusion in Amtrak’s central information and reservation system in the same manner as the trains.

Figure 5B

PACIFIC SURFLINER ROUTE OWNERSHIP AND TRACK CHARACTERISTICS								
Between	Mile Post	And	Mile Post	Miles	Owner of Track	*No. of Tracks	Max. Speed	Signal System
San Luis Obispo	248.5	East San Luis Obispo	251.5	3.0	UP	2	60	DTC
East San Luis Obispo	251.5	West Santa Barbara	365.2	113.7	UP	1	60	DTC
West Santa Barbara	365.2	East Santa Barbara	368.6	3.4	UP	2	40	DTC
East Santa Barbara	368.6	Moorpark	423.1	54.5	UP	1	70	DTC/CTC
	423.1							
	=							
Moorpark	426.4	Ventura/LA County Line	442.0	15.6	(a)UP/VCTC	1	70	CTC
Ventura/LA County Line	442.0	Raymer (West of Van Nuys)	453.1	11.1	(a)UP/LACMTA	1	70	CTC
Raymer (West of Van Nuys)	453.1	Burbank Jct.	462.6	9.5	(a)UP/LACMTA	2	79	CTC
	462.6							
Burbank Jct.	= 11.4	Glendale (Fletcher Drive)	4.9	6.5	(a)UP/LACMTA	2	79	CTC
Glendale (Fletcher Drive)	4.9	C.P. Dayton	2.1	2.8	LACMTA	2	79	CTC
C.P. Dayton (b)	2.1	Mission Tower	0.8	1.3	LACMTA	2	50	CTC
Mission Tower	0.8	L.A. Union Station	0.0	1.6	Catellus	3	15	CTC
Mission Tower	0.0	Redondo Jct.		3.2	LACMTA	1	65	CTC
Redondo Jct.	143.2	Fullerton	165.0	21.8	BNSF	1	79	CTC
Fullerton	165.0	Santa Ana (Aliso)	175.2	10.2	OCTA	2	79	CTC
Santa Ana (Aliso)	175.2	Orange/San Diego Co. Line	207.4	32.2	OCTA	2	90	CTC/ATS
Orange/San Diego Co. Line	207.4	Del Mar/San Diego City Limits	245.6	38.2	NSDCTDB	1	90	CTC/ATS
Limits	245.6	Sorrento	249.1	3.5	MTS	1	90	CTC/ATS
Sorrento	249.1	San Diego	267.6	18.5	MTS	1	79	CTC
Total (includes round trip between Union Station and Mission Tower)				350.6				

* General number of mainline tracks

(a) On this segment LACMTA (VCTC between Moorpark and the Ventura/LA County Line) purchased a 40 foot wide portion of UP’s right-of-way. Between Raymer and Burbank Junction, LACMTA constructed and owns a second main line track.

(b) Via West Side of Los Angeles River (Downey Avenue Bridge)

Owners:

- BNSF - BNSF Railway Company
- Catellus - Catellus Develop. Corp. (a real estate development company; owner of L.A. Union Station)
- LACMTA - Los Angeles County Metropolitan Transportation Authority
- MTS - San Diego Metropolitan Transit System
- NSDCTDB - North San Diego County Transit Development Board
- OCTA - Orange County Transportation Authority
- UP - Union Pacific Railroad Company
- VCTC - Ventura County Transportation Commission

Signal Systems:

- ATS - Automatic Train Stop - Allows speeds of 90 miles per hour. System automatically applies train brakes if a restrictive signal indication is not observed or warning alarm is not acknowledged.
- CTC - Centralized Traffic Control - Wayside signals protect possession of blocks. Signals and powered switches are also remotely controlled from the dispatching center to direct the movement of trains.
- DTC - Direct Traffic Control - Dispatching center gives authority for train movement by radio to train crew directly.

Unlike trains, bus operating costs are borne entirely by the State, although the revenues that the bus service generates offset much of these costs. A mileage/yield-based portion of the revenue from each through bus/rail ticket is allocated to the bus portion of the trip. This allocated revenue is then transferred to the cost of the bus, thereby reducing the actual State expense.

Following is a listing of the Pacific Surfliner bus routes and their origins/destinations and main stops. Route 1 is a San Joaquin bus route, but is included since it also feeds passengers to the Pacific Surfliners and functions as an important supplement to train service on the north end of the Pacific Surfliners. Cities that are Pacific Surfliner train connection points are in *italics*.

Route 1–Los Angeles Basin (San Joaquin Route bus)

Los Angeles-Bakersfield

Route 4–South Coast

Los Angeles-Oxnard-Santa Barbara

Route 17–Central Coast

Santa Barbara-San Luis Obispo-Paso Robles-San Jose-San Francisco/Oakland

Route 36–San Luis Obispo

Paso Robles-San Jose-San Francisco/Oakland

LOS ANGELES-SAN DIEGO-SAN LUIS OBISPO RAIL CORRIDOR AGENCY (LOSSAN)

LOSSAN functions as a planning agency and an advisory group for intercity rail in Southern California. In 2001, LOSSAN added the San Luis Obispo Council of Governments as a voting member of its Board and converted the Ventura County Transportation Commission, the Santa Barbara County Association of Governments, and the San Diego Association of Governments from ex-officio members to voting members.

The members of the LOSSAN Technical Advisory Committee (TAC) are now Amtrak, BNSF, the CPUC, the Department’s Division of Rail, Los Angeles County Metropolitan Transportation Authority, San Diego Metropolitan Transit System, North San Diego County Transit District, Orange County Transportation Authority, San Diego Association of Governments, San Luis Obispo Council of Governments, Santa Barbara County Association of Governments, Southern California Association of Governments, Southern California Regional Rail Authority (Metrolink), UP, and Ventura County Transportation Commission.

These actions were taken after the dissolution of Southern California Intercity Rail Group, originally created by a Joint Powers Agreement in 1996 to plan intercity rail service in Southern California.

Figure 5C

PACIFIC SURFLINER Route Annual Operating Performance - State Fiscal Years											
State Fiscal Year	Notes	Ridership Data			Financial Data for Operations - State Supported Train and Bus Service Only*						
		All Trains		State Supported*	Revenue	Expense	Loss	State Cost	Amtrak Cost	Train Loss per PM	Farebox Ratio
		Ridership	PM/TM	Ridership							
			(F1)		(F2)		(F3)	(F4)	(F5)	(F6)	
1973-74	(S1)	381,844									
1974-75		356,630									
1975-76		376,900									
1976-77	(S2)	607,976	146	101,572	\$ 598,140	\$ 1,662,714	\$ 1,064,574	\$ 548,534		36.0%	
1977-78	(S3)	753,246	128	258,800	\$ 1,446,036	\$ 3,768,065	\$ 2,322,029	\$ 1,325,087		38.4%	
1978-79		967,316	163	415,865	\$ 2,203,403	\$ 4,333,602	\$ 2,130,199	\$ 1,178,667		50.8%	
1979-80		1,218,196	177	557,113	\$ 3,341,561	\$ 5,536,840	\$ 2,195,279	\$ 1,064,713		60.4%	
1980-81	(S4)	1,238,135	152	555,418	\$ 4,032,480	\$ 6,572,539	\$ 2,540,059	\$ 1,233,490		61.4%	
1981-82		1,167,718	144	533,093	\$ 4,097,254	\$ 6,607,395	\$ 2,510,141	\$ 1,217,418	6.3¢	62.0%	
1982-83		1,131,146	138	488,606	\$ 4,094,750	\$ 6,928,334	\$ 2,833,584	\$ 1,374,097	8.3¢	59.1%	
1983-84		1,221,256	143	524,857	\$ 4,842,400	\$ 6,337,083	\$ 1,494,683	\$ 1,452,450	4.1¢	76.4%	
1984-85		1,240,003	152	568,902	\$ 5,410,502	\$ 6,411,308	\$ 1,000,806	\$ 1,212,261	2.5¢	84.4%	
1985-86		1,394,320	167	597,025	\$ 5,658,915	\$ 6,424,634	\$ 765,719	\$ 1,097,966	1.8¢	88.1%	
1986-87		1,461,003	173	624,618	\$ 6,072,523	\$ 6,510,113	\$ 437,590	\$ 955,509	1.0¢	93.3%	
1987-88	(S5)	1,661,512	174	749,996	\$ 8,223,462	\$ 7,859,783	\$ (363,679)	\$ 1,145,330	(0.7¢)	104.6%	
1988-89		1,717,539	164	865,003	\$ 11,458,084	\$ 10,563,459	\$ (894,625)	\$ 794,159	(1.2¢)	108.5%	
1989-90		1,746,673	174	882,167	\$ 12,189,942	\$ 11,808,251	\$ (381,691)	\$ 988,847	(1.4¢)	103.2%	
1990-91	(S6)	1,791,781	159	946,988	\$ 13,306,307	\$ 13,364,150	\$ 57,843	\$ 1,170,448	(0.7¢)	99.6%	
1991-92		1,673,107	161	884,224	\$ 13,152,063	\$ 13,245,924	\$ 93,861	\$ 1,012,564	(0.5¢)	99.3%	
1992-93	(S7)	1,810,572	155	951,987	\$ 13,692,612	\$ 13,254,709	\$ (437,903)	\$ 958,857	(0.8¢)	103.3%	
1993-94	(S8)	1,699,882	133	876,766	\$ 12,725,094	\$ 14,017,591	\$ 1,292,497	\$ 1,525,074	\$ 727,987	0.9¢	90.8%
1994-95	(S9)	1,464,577	119	790,781	\$ 11,805,859	\$ 16,061,849	\$ 4,255,990	\$ 3,642,588	\$ 1,700,424	5.0¢	73.5%
1995-96	(S10)	1,480,674	125	912,905	\$ 13,553,553	\$ 23,983,026	\$ 10,429,473	\$ 11,107,071	\$ 863,230	11.4¢	56.5%
1996-97		1,617,641	135	1,035,290	\$ 14,804,355	\$ 39,563,546	\$ 24,759,191	\$ 16,189,103	\$ 10,020,544	24.5¢	37.4%
1997-98	(S11)	1,624,693	120	1,069,547	\$ 15,194,498	\$ 44,769,723	\$ 29,575,225	\$ 20,369,417	\$ 10,600,767	29.1¢	33.9%
1998-99	(S12)	1,563,275	102	1,047,394	\$ 16,401,625	\$ 40,391,845	\$ 23,990,220	\$ 22,078,192	\$ 4,014,071	25.3¢	40.6%
1999-00		1,567,318	99	1,050,103	\$ 17,883,725	\$ 37,497,489	\$ 19,613,764	\$ 20,806,672	\$ 1,381,986	19.8¢	47.7%
2000-01	(S13)	1,661,704	106	1,113,342	\$ 20,430,153	\$ 38,215,732	\$ 17,785,579	\$ 21,911,398	\$ 335,197	16.6¢	53.5%
2001-02	(S14)	1,742,768	109	1,167,655	\$ 20,922,453	\$ 39,374,190	\$ 18,451,737	\$ 21,976,183	\$ 502,080	16.6¢	53.1%
2002-03		2,030,491	114	1,360,429	\$ 22,247,564	\$ 42,331,531	\$ 20,083,967	\$ 23,901,407	\$ 472,848	16.7¢	52.6%
2003-04		2,307,010	127	1,545,697	\$ 24,559,183	\$ 45,300,782	\$ 20,741,599	\$ 21,719,288	\$ 94,883	16.0¢	54.2%
TOTAL		42,676,906		22,476,143	\$ 304,348,496	\$ 512,696,207	\$ 208,347,711	\$ 203,956,790			

* Through September 1995, the State supported specific trains; Amtrak operated the remaining trains as basic system trains not receiving State funding. Between October 1995 and October 1997, the State supported 64 percent of the operation of all trains on the Pacific Surfliner Route; Amtrak supports 36 percent as basic system trains. Effective November 1997, State support increased to 67%. State supports 100 percent of net cost of connecting buses; all data shown includes bus operations.

(S1) Three round trips between Los Angeles and San Diego (LA-SD) (not State-supported) through 8/30/76.
(S2) Fourth LA-SD round trip (first State-supported train) added 9/1/76; fifth LA-SD round trip (second State-supported train) added 4/24/77.
(S3) Sixth LA-SD round trip (third State-supported train) added 2/14/78.
(S4) Seventh LA-SD round trip (not State-supported) added 10/26/80.
(S5) Eighth LA-SD round trip (fourth State-supported train) added 10/25/87; first State-supported round trip between Los Angeles and Santa Barbara (LA-SB) added 6/26/88.
(S6) Second State-supported LA-SB round trip added 10/28/90.
(S7) Ninth LA-SD round trip (not State-supported) added 10/25/92.
(S8) Third State-supported LA-SB round trip added 2/1/94.
(S9) Ninth LA-SD round trip (State-supported in one direction only) discontinued 5/15/95.
(S10) Los Angeles-San Luis Obispo round trip added 10/29/95, also represents fourth LA-SB round trip.
(S11) Ninth LA-SD round trip restored and tenth LA-SD round trip added 10/26/97.
(S12) Eleventh LA-SD roundtrip added 10/25/98.
(S13) Twelfth LA-SD round trip on weekends only added on 5/21/01.
(S14) Fifth LA-SB round trip on weekends only added on 5/25/02.

(F1) Passenger-miles per train mile (PM/TM), a measure of the average load on a train over its entire route. Actual passenger-mile data was not provided by Amtrak prior to August 1981. PM/TM figures shown for All Trains are calculated by Amtrak and cover the Amtrak Fiscal Year (October through September).
(F2) Prior to October 1983, all trains billed on solely related cost basis. From October 1983 through September 1995, all Los Angeles- San Diego trains and the first Los Angeles-Santa Barbara train billed on short-term avoidable cost basis. The second and third Los Angeles- Santa Barbara trains billed on long-term avoidable cost basis. Between October 1995 and September 1996, all trains billed on long-term avoidable cost basis. Effective October 1996, all trains billed on Full Cost (Train, Route and System) Basis. Depreciation and interest (equipment capital cost) included in operating cost under solely-related basis but excluded and charged separately under short-term, long-term avoidable and full cost bases.
(F3) From October 1976 through September 1983, State cost was 48.5 percent of operating loss (including equipment costs). For third Los Angeles-Santa Barbara train, State cost was 100 percent of operating loss from February 1994 through September 1994, and 70 percent through September 1995. For all other trains, effective October 1983, through September 1995, State cost was 65 percent of operating loss plus 50 percent of depreciation and interest (equipment capital cost). Between October 1995 and September 1996, State cost was 100 percent of operating loss and 60 percent of equipment capital cost for the State supported 64 percent of train service on the route. Between October 1996 and September 1997, State cost was 55 percent of operating loss and 100 percent of equipment capital cost for the 64 percent State share. Effective October 1997, State is billed contractually specified percentages of most individual cost elements, plus a fixed amount for certain other cost elements. In November 1997, the State share increased to 67 percent of train service on the route to reflect additional State supported service. Also includes State payment of special payments to Amtrak for additional service and State payment for entire net cost of all connecting bus routes.
(F4) Beginning in State Fiscal Year 1993-94, Amtrak cost is based on billings submitted and reflects cost bases and Amtrak shares as stated in notes (F2) and (F3) above, but does not include the unbilled Amtrak share of fixed cost elements. Prior to FY 1993-94, data to calculate Amtrak cost is not available. Does not represent the difference between Loss and State Cost, as the latter includes bus expenses and equipment capital costs not included in Amtrak costs.
(F5) Train loss (deficit) per train passenger mile. Separate passenger-mile data for State-supported trains was not provided by Amtrak prior to August 1981. Connecting buses not included in loss per passenger mile data.
(F6) Farebox Ratio, the ratio of Revenue to Expense.

PERFORMANCE

Figure 5C shows ridership and financial performance data on an annual (State FY) basis from the start of State-supported service in 1976-77 through 2003-04. Total ridership reached a peak of 2.3 million in 2003-04. Introduction of Metrolink commuter rail service in the Los Angeles basin in October 1992 and Coaster commuter rail service in the San Diego area in 1995 had a major effect on ridership. Since commuter rail service was introduced, overall ridership on the corridor has increased significantly, but commuter services did divert ridership from the Pacific Surfliners. The farebox ratio was near or over 100 percent for six consecutive years from 1987-88 through 1992-93, and has since declined. The decline is due to the introduction of commuter rail service that diverted significant short-haul ridership and revenues and increases in the amount and type of costs charged to the service by Amtrak.

The introduction of the “Rail 2 Rail” Program on Amtrak and Metrolink service in September 2002 brought a new era to the service. Then in April 2004, the program was expanded to the Coaster. The program allows joint ticket honoring between Amtrak and commuter rail services. Pacific Surfliner ridership has jumped 32 percent between 2001-02 and 2003-04, (with no increase in service) mostly the result of the Rail 2 Rail Program.

In Amtrak’s 2003-04 fiscal year, the on-time performance has averaged 86.9 percent. The planned triple track project in Los Angeles County and double track projects in San Diego County will improve the reliability and on-time performance of the Pacific Surfliners by facilitating both passenger and freight train movements and providing more opportunities for trains to pass each other.

OPERATIONAL AND SERVICE IMPROVEMENTS

The focus of short-term operating strategies is to improve customer service and amenities, and increase the cost-effectiveness of the services. These two strategies are complementary, as an improvement in customer satisfaction should increase ridership and revenue.

Annual operational and service improvement strategies are detailed in the *Pacific Surfliner Route Business Plan*. For example, the Business Plan discusses issues such as operational improvements with the new “Rail 2 Rail” Program, coordination efforts with other rail operators, marketing strategies, fare promotions, and Amtrak buses.

POTENTIAL TRAIN SERVICE IMPROVEMENTS

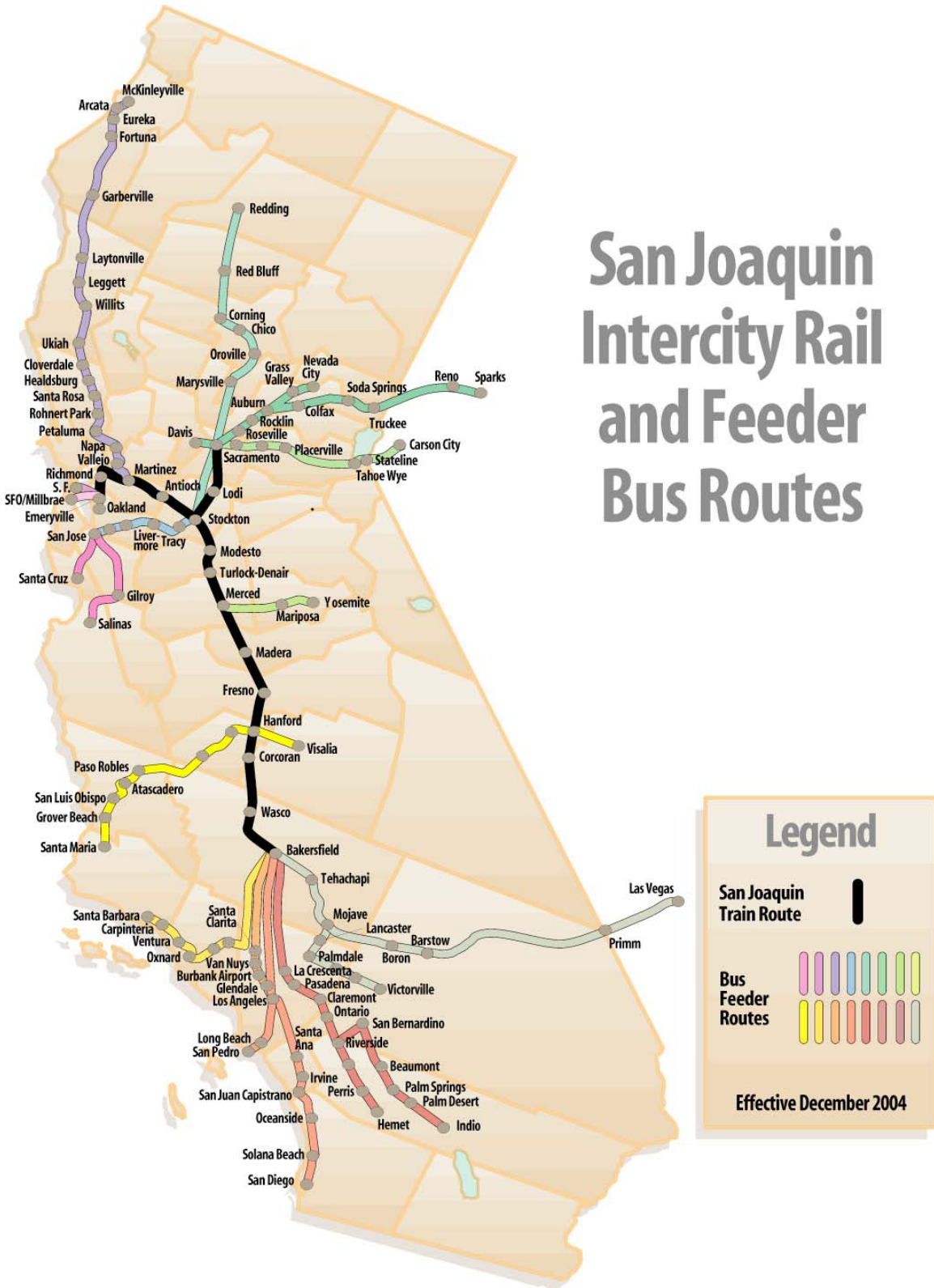
The Department, in conjunction with Amtrak, anticipates there will be eventual demand for fourteen round-trips on the Pacific Surfliners between San Diego and Los Angeles.

It is important to note that the start-up dates for service are based on projected service needs. Demonstrated ridership demand, approval from Amtrak and the relevant railroad(s), availability of capital funding and equipment, and completion of necessary capital projects will affect when each of the service improvements can be implemented.

The Department's proposed expansion of the Pacific Surfliner Route is as follows:

- 2007-08 Los Angeles-San Diego, twelfth round-trip.
- 2010-11 Los Angeles-San Diego, thirteenth round-trip.
- 2012-13 Los Angeles-Goleta, sixth round trip,
Goleta-San Luis Obispo, third round trip.
- 2013-14 Los Angeles-San Diego, fourteenth round-trip.

Figure 6A



CHAPTER VI SAN JOAQUIN ROUTE

BAY AREA/SACRAMENTO-FRESNO-BAKERSFIELD LOS ANGELES

PRINCIPAL 2003-04 to 2013-14 ROUTE OBJECTIVES

- Increase annual ridership 46 percent, from 739,000 to 1,082,000 passengers.
- Increase annual revenues 55 percent, from \$21.9 to \$33.9 million.
- Increase frequency of daily round-trip service from 4 to 5 between Oakland and Bakersfield and from 2 to 3 between Sacramento and Bakersfield.
- Reduce train running times to five and a half hours between Oakland and Bakersfield and four hours forty minutes between Sacramento and Bakersfield.
- Improve the reliability (on-time performance) of trains.

BACKGROUND

Two daily trains served the San Joaquin Valley until May 1971 when Amtrak was formed. Each train used a different route in the Valley, and was operated by different railroads. SP operated the San Joaquin Daylight between Oakland and Los Angeles and a connecting train, the Sacramento Daylight, between Sacramento and Lathrop or Tracy providing connecting service with the San Joaquin Daylight. ATSF operated the San Francisco Chief between the Bay Area and Chicago via Stockton, Fresno and Bakersfield.

Amtrak's initial route structure in May 1971 used the SP's Coast Line for service between Northern and Southern California, leaving the San Joaquin Valley without rail passenger service. Public pressure for restoration of rail service began almost immediately after the formation of Amtrak. As a result, Amtrak's appropriation for FFY 1974 included funding for service in the San Joaquin Valley. Amtrak selected a joint SP-ATSF route using a connection between the two railroads at Port Chicago (near Martinez). On March 6, 1974, the new San Joaquins entered service between Oakland and Bakersfield and was entirely funded by Amtrak.

In 1979, a major reduction in Amtrak's nationwide route structure was proposed, and the San Joaquin was scheduled to be terminated. However, the State reached an agreement with Amtrak to continue the train with State support under the provisions of Section 403(b) of the Amtrak Act.

Service on the San Joaquins has increased from the original single round-trip to the current six daily round-trips as follows:

- 2/3/80 Oakland-Bakersfield, second round-trip added.
- 12/17/89 Oakland-Bakersfield, third round-trip added.
- 10/25/92 Oakland-Bakersfield, fourth round-trip added.
- 2/21/99 Sacramento-Bakersfield, first train to extend from Stockton to Sacramento added (fifth round-trip on route).
- 3/18/02 Sacramento-Bakersfield, second round-trip added (sixth round trip on route).

Figure 6A is the San Joaquin route map, including the connecting bus services.

ROUTE DESCRIPTION

The San Joaquin Route comprises 363 route miles, extending 314 miles between Oakland and Bakersfield with 13 intermediate stops and 49 miles between Sacramento and Stockton, with one additional intermediate stop. Amtrak operates the San Joaquins under provisions of its contracts with the BNSF and UP railroads.

Predominant right of way ownership is by the BNSF (Port Chicago-Bakersfield). The UP owns 39 miles at the north end of the route between Oakland and Port Chicago and 49 miles in the new segment between Stockton and Sacramento. Figure 6B describes the current ownership, segment mileage, and track and signal characteristics of the San Joaquin Route.

Scheduled train running time between Bakersfield and Oakland varies from six hours five minutes to six hours twenty minutes. Overall average speed, including station dwell time, varies from 50 mph to 52 mph. Scheduled train running time between Sacramento and Bakersfield is five hours fifteen minutes to five hours twenty-three minutes, and overall average speed is 52 to 54 mph.

Figure 6B

SAN JOAQUIN ROUTE OWNERSHIP AND TRACK CHARACTERISTICS								
Between	Mile Post	And	Mile Post	Route Miles	Owner of Track	*No. of Tracks	Max Speed	Signal System
Oakland Jack London Square	7.0	Oakland 10th Street	**4.2	2.8	UP	2	40/60	ABS
Oakland 10th Street	**2.2	Martinez	31.7	29.5	UP	2	40/60	ABS
Martinez	31.7 = 1169.3	Port Chicago	1164	5.8	UP	1	30	ABS/DTC
Port Chicago	1164	Stockton	1121	42.1	BNSF	1-2	79	ABS/CTC
Sacramento	89.0	Sacramento (Elvas)	91.8	2.8	UP	2	35	ABS/CTC
Sacramento (Elvas)	91.8 = 38.8	Stockton	84.7	45.9	UP	1	60	CTC
Stockton	1121	Bakersfield	887.7	233.7	BNSF	1	79	CTC
				Total	362.6			
<p>* General Number of Mainline Tracks</p> <p>** Miles represent distances between post miles from both directions to an approximate location near 10th Street in Oakland.</p> <p>Owners: BNSF - BNSF Railway Company UP - Union Pacific Railroad Company</p> <p>Signal Systems: ABS - Automatic Block Signals - Possession of a segment of track (block) is protected by a wayside signal. Switches must be thrown manually by train crews entering sidings. CTC - Centralized Traffic Control - Wayside signals protect possession of blocks. Signals and powered switches are also remotely controlled from the dispatching center to direct the movement of trains. DTC - Direct Traffic Control - Dispatching center gives authority for train movement by radio to train crew directly.</p>								

CONNECTING BUS SERVICES

The extensive network of buses connecting with the San Joaquins is essential to the route as more than half of all San Joaquin riders use one or more buses for a portion of their trip. Ridership analysis shows that feeder bus riders make longer than average trips, and therefore produce higher revenues per trip.

The Department contracts with Amtrak for the provision of dedicated feeder bus services, and Amtrak then contracts with bus operators. The bus routes function as direct parts of the Amtrak system, with coordinated connections, guaranteed seating, integrated fares and ticketing procedures, and inclusion in Amtrak's central information and reservation system in the same manner as the trains.

Unlike the trains, the bus operating costs are borne entirely by the State, although bus revenues offset much of the bus operating costs. A mileage/yield-based portion of the revenue from each through bus/rail ticket is allocated to the bus portion of the trip. This allocated revenue is then transferred to the cost of the bus, reducing the actual State expense.

Following is a table of the San Joaquin bus routes and their origins/destinations and main stops, as well as the Capitol Corridor bus routes that also connect to the San Joaquins. Cities that are San Joaquin train connection points are in *italics*.

San Joaquin Bus Routes

Route 1 Network—Los Angeles Basin

1A—*Bakersfield*-Los Angeles-San Diego

1B—*Bakersfield*-Los Angeles-Long Beach-San Pedro

1C—*Bakersfield*-Santa Clarita-Van Nuys-Simi Valley

Route 3—Sacramento Valley

Stockton-Sacramento-Davis-Chico-Redding

Route 6—South Bay

Stockton-San Jose

Route 7—North Bay/Redwood Empire

Martinez-Vallejo-Napa-Santa Rosa-Ukiah-Eureka-McKinleyville

Route 9—High Desert-Las Vegas

Bakersfield-Barstow-Las Vegas

Route 10—Valley-South Coast

Bakersfield-Oxnard-Santa Barbara

Route 12—Antelope Valley

Bakersfield-Mojave-Palmdale-Victorville

Route 15—Yosemite

Merced-Yosemite National Park

Route 18—Valley-Central Coast

18A—*Hanford*-San Luis Obispo-Santa Maria

18B—*Hanford*-Visalia

Route 19—Inland Empire-Coachella Valley

Bakersfield-San Bernardino-Riverside-Hemet-Palm Springs-Indio

Route 34—Bay Area-Stockton

Stockton-Oakland-San Francisco

Capitol Corridor Bus Routes

Route 20–Sierra Foothills/High Sierra

Sacramento-Grass Valley-Nevada City-Reno-Sparks

Route 21–Monterey Bay/Central Coast

Via Route 6 to San Jose-Salinas-Monterey-King City

Route 23–Lake Tahoe

Sacramento-Stateline-Carson City

Route 35–Santa Cruz (Highway 17 Express)

Via Route 6 to San Jose-Santa Cruz

Amtrak Bus Route

Route 99–Trans Bay

Emeryville-San Francisco (Connects to the San Joaquins, Capitol Corridor, Coast Starlight and California Zephyr trains)

SAN JOAQUIN VALLEY RAIL COMMITTEE

The San Joaquin Valley Rail Committee consists of representatives from each county served by the San Joaquin trains and other key bus-served counties. Agency associate members represent Amtrak, CPUC, UP, BNSF, Metropolitan Transportation Commission (MTC), Southern California Association of Governments, and the Department.

The committee is informed of all significant matters affecting the San Joaquins. It provides valuable input to the Department on all aspects of the service. Section 14074.8 of the Government Code provides that the committee may confer with the Secretary of the Business, Transportation and Housing Agency (BT&H) to coordinate intercity passenger rail service for the San Joaquin Corridor.

PERFORMANCE

Figure 6C shows ridership and financial performance data on an annual (State FY) basis from the start of State-supported service in 1979-80 through 2003-04. Ridership and revenues have increased at a fairly steady rate over that period, as have expense, total loss and State cost. Farebox ratio was at a high in 1988-89, and has since dropped. This is largely because Amtrak has been steadily increasing the amount and type of costs that are included in the farebox ratio. (See Chapter IV for more information on this subject.)

On-time performance on the San Joaquins has varied widely over the last few years. In FFY 2003-04, on-time performance has averaged 56.1 percent. Planned projects to double track portions of the San Joaquin Route will improve reliability and on-time performance by facilitating both passenger and freight train movements and by providing more opportunities for trains to pass each other.

Figure 6C

SAN JOAQUIN Route Annual Operating Performance - State Fiscal Years

State Fiscal Year	Notes	Ridership Data		Financial Data for Operations						
		Ridership	PM/TM (F1)	Revenue	Expense (F2)	Loss	State Cost (F3)	Amtrak Cost (F4)	Train Loss per PM (F5)	Farebox Ratio (F6)
1973-74	(S1)	38,770	83.6							
1974-75		66,990	44.2							
1975-76		66,530	43.8							
1976-77		87,642	56.0							
1977-78		80,611	52.7							
1978-79		87,645	60.2							
1979-80	(S2)	123,275	63.6	\$ 1,174,065	\$ 3,975,185	\$ 2,801,120	\$ 518,206		18.4¢	29.5%
1980-81		159,498	55.3	\$ 2,224,137	\$ 6,940,934	\$ 4,716,797	\$ 1,360,391		18.4¢	32.0%
1981-82		189,479	65.3	\$ 3,115,710	\$ 7,774,029	\$ 4,658,319	\$ 2,228,585		14.0¢	40.1%
1982-83		186,121	62.9	\$ 3,342,137	\$ 7,991,697	\$ 4,649,560	\$ 2,490,275		14.6¢	41.8%
1983-84		248,275	85.3	\$ 4,730,431	\$ 8,094,789	\$ 3,364,358	\$ 2,518,066		7.3¢	58.4%
1984-85		269,837	94.6	\$ 5,210,951	\$ 8,641,293	\$ 3,430,342	\$ 2,802,955		7.7¢	60.3%
1985-86		280,798	101.1	\$ 5,425,329	\$ 8,610,554	\$ 3,185,225	\$ 2,658,895		6.8¢	63.0%
1986-87		304,668	106.1	\$ 6,084,677	\$ 9,179,133	\$ 3,094,456	\$ 2,929,148		5.1¢	66.3%
1987-88		340,573	121.1	\$ 7,457,686	\$ 9,633,659	\$ 2,175,973	\$ 2,605,572		2.2¢	77.4%
1988-89		370,190	133.7	\$ 9,527,268	\$ 10,968,216	\$ 1,440,948	\$ 1,887,450		1.3¢	86.9%
1989-90	(S3)	418,768	116.9	\$ 11,845,743	\$ 15,286,520	\$ 3,440,777	\$ 3,544,332		3.2¢	77.5%
1990-91		463,906	104.1	\$ 12,691,986	\$ 18,456,785	\$ 5,764,799	\$ 5,803,565		4.9¢	68.8%
1991-92		483,593	104.3	\$ 12,369,805	\$ 18,633,777	\$ 6,263,972	\$ 6,472,598		4.3¢	66.4%
1992-93	(S4)	516,113	109.6	\$ 12,628,496	\$ 22,227,149	\$ 9,598,653	\$ 10,789,651		6.5¢	56.8%
1993-94		558,569	94.6	\$ 13,894,624	\$ 26,678,861	\$ 12,784,237	\$ 12,335,021	\$ 3,937,150	8.3¢	52.1%
1994-95		524,680	88.8	\$ 12,244,668	\$ 25,077,153	\$ 12,832,485	\$ 12,668,018	\$ 3,705,069	9.7¢	48.8%
1995-96		526,088	86.6	\$ 12,477,497	\$ 25,386,099	\$ 12,908,602	\$ 14,483,048	\$ 1,360,327	11.8¢	49.2%
1996-97		652,544	106.1	\$ 13,817,681	\$ 34,528,165	\$ 20,710,484	\$ 16,265,387	\$ 5,672,236	18.6¢	40.0%
1997-98		702,178	118.0	\$ 15,230,966	\$ 36,517,290	\$ 21,286,324	\$ 17,190,515	\$ 4,493,597	17.7¢	41.7%
1998-99	(S5)	680,687	102.8	\$ 16,496,457	\$ 37,269,835	\$ 20,773,378	\$ 19,938,254	\$ 1,712,168	17.6¢	44.3%
1999-00		671,295	92.7	\$ 18,061,512	\$ 41,791,782	\$ 23,730,270	\$ 24,232,326	\$ 652,236	19.0¢	43.2%
2000-01		710,833	97.9	\$ 19,667,681	\$ 43,404,325	\$ 23,736,644	\$ 24,350,127	\$ 540,809	18.2¢	45.3%
2001-02	(S6)	733,152	96.9	\$ 20,114,693	\$ 46,503,548	\$ 26,388,855	\$ 26,281,035	\$ 396,392	20.0¢	43.3%
2002-03		769,708	89.9	\$ 20,318,564	\$ 50,552,529	\$ 30,233,965	\$ 29,729,650	\$ 504,315	21.7¢	40.2%
2003-04		752,227	87.2	\$ 22,100,796	\$ 50,061,460	\$ 27,960,664	\$ 27,960,664	\$ 89,345	20.5¢	44.1%
TOTAL		12,065,243		\$ 282,253,560	\$ 574,184,767	\$ 291,931,207	\$ 274,043,734			

(S1) Service started 3/6/74 with one round-trip between Oakland and Bakersfield. Data is for four months only.

(S2) State support started 10/1/79. Data is for nine months, during which time ridership totaled 93,206. Second round trip added 2/3/80 between Oakland and Bakersfield.

(S3) Third round trip added 12/17/89 between Oakland and Bakersfield.

(S4) Fourth round trip added 10/25/92 between Oakland and Bakersfield.

(S5) Fifth round-trip added 2/21/99 between Sacramento and Bakersfield.

(S6) Sixth round-trip added 3/18/02 between Sacramento and Bakersfield.

(F1) Passenger-miles per train mile (PM/TM), a measure of the average load on a train over its entire route.

(F2) Prior to October 1983, all trains billed on solely related cost basis. From October 1983 through September 1995, all trains billed on short term avoidable cost basis, except fourth round trip billed at long term avoidable cost basis. Effective October 1995, all trains billed on long term avoidable cost basis. Effective October 1996, all trains billed on Full Cost (Train, Route and System) Basis. Includes cost of connecting buses. Depreciation and interest (equipment capital cost) included in operating cost under solely-related cost basis but excluded and charged separately under short-term, long-term avoidable and full cost bases.

(F3) From October 1979 through September 1983, State cost increased in stages from 18.5 to 48.5 percent of operating loss (including equipment costs). Between October 1983 and September 1995, State cost was 65 percent of train operating loss for first three round trips, plus 50 percent of depreciation and interest (equipment capital cost). For the fourth round trip, State cost was 70 percent of train operating loss plus equipment capital cost. Between October 1995 and September 1996, State cost was 100 percent of train operating loss and 60 percent of equipment capital cost. Between October 1996 and September 1997, State cost was 65 percent of train operating loss. Effective October 1997, State is billed contractually specified percentages of most individual cost elements, plus a fixed amount for certain other cost elements. Also includes State payment of costs of special agreements with Amtrak for use of equipment, and State payment of entire net cost of all connecting bus routes.

(F4) Beginning in State Fiscal Year 1993-94, Amtrak cost is based on billings submitted and reflects cost bases and Amtrak shares as stated in notes (F2) and (F3) above. However, Amtrak does not include the unbilled Amtrak share of fixed cost elements. Prior to FY 1993-94, data to calculate Amtrak cost is not available. Does not represent the difference between Loss and State Cost, as the latter includes bus expenses and equipment capital costs not included in Amtrak costs.

(F5) Train loss (deficit) per train passenger-mile. Connecting buses not included in loss per passenger mile data.

(F6) Farebox Ratio, the ratio of Revenue to Expense.

OPERATIONAL AND SERVICE IMPROVEMENTS

The focus of short-term operating strategies is to improve customer service and amenities and increase the cost-effectiveness of the services. These two strategies are complementary, as an improvement in customer satisfaction should increase ridership and revenue.

Annual operational and service improvement strategies are detailed in the *San Joaquin Route Business Plan*. For example, the Business Plan discusses issues such as the community outreach program, marketing campaigns, and mid-life overhaul of the original California Cars, food service improvements, and an expanded “Free Transfer” program with local transit operators.

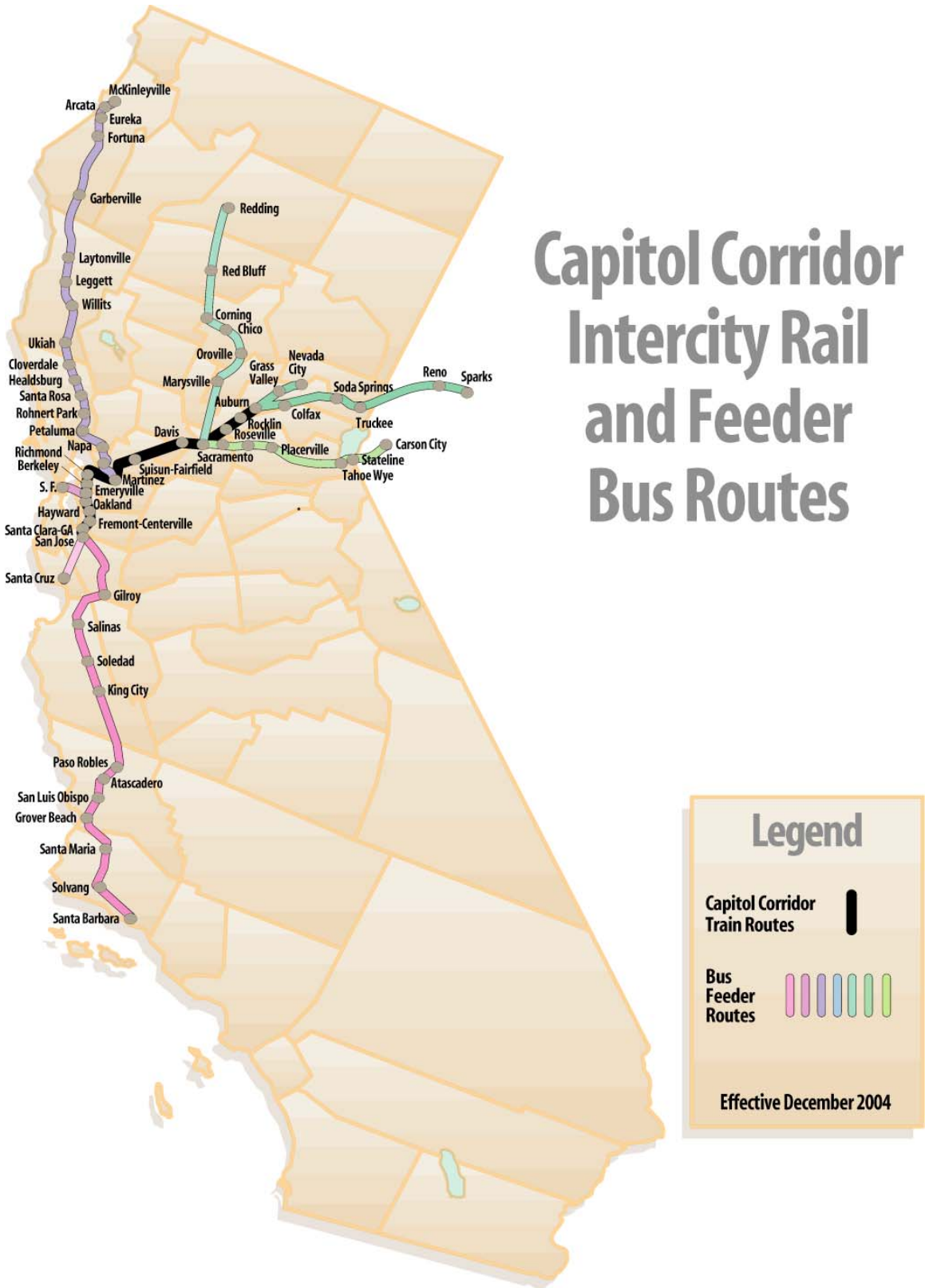
POTENTIAL TRAIN SERVICE IMPROVEMENTS

It is important to note that the start-up dates for service are based on projected service needs. Demonstrated ridership demand, approval from Amtrak and the relevant railroad(s), availability of operating and capital funding and equipment, and completion of necessary capital projects will affect when each of the service improvements can be implemented.

The Department, in conjunction with Amtrak, anticipates that there will be eventual demand for eight round-trips on the San Joaquins. The Department's proposed expansion of the San Joaquin Route is as follows:

- 2010-11 Bakersfield-Sacramento, third round-trip to extend from Stockton to Sacramento (seventh round-trip on route).
- 2012-13 Bakersfield-Oakland, fifth round-trip to extend from Stockton to Oakland (eighth round-trip on route).

Figure 7A



CHAPTER VII THE CAPITOL CORRIDOR

AUBURN-SACRAMENTO-OAKLAND-SAN JOSE

PRINCIPAL 2003-04 to 2013-14 ROUTE OBJECTIVES

- Increase annual ridership 102 percent, from 1,165,000 to 2,352,000 passengers.
- Increase annual revenues 118 percent, from \$13.4 to \$29.2 million.
- Increase revenue/cost (farebox) ratio from 37.2 percent to 46.9 percent.
- Increase frequency of daily round-trips from 4 to 9 between San Jose and Oakland, from 12 to 18 between Oakland and Sacramento, and from 1 to 8 between Sacramento and Roseville.
- Reduce train-running times to an hour and a half between Sacramento and Oakland.
- Improve the reliability (on-time performance) of trains.
- Provide real-time information to passengers on train status (e.g. anticipated arrival time), particularly at unstaffed stations.

BACKGROUND

Intercity rail service started on the Capitol Corridor in 1991, making this route the most recent of the three State-supported routes. Assembly Concurrent Resolution (ACR) 132 (Hannigan), Statutes of 1988, directed the Metropolitan Transportation Commission (MTC), with assistance from the Sacramento Area Council of Governments and the Department to conduct a study of the Auburn-Sacramento-Oakland-San Jose intercity rail corridor. The final report titled ACR 132 Intercity Rail Corridor Upgrade Study was published by MTC in 1990. This study provided the basis for the initiation of three round-trips on the route on December 12, 1991 from San Jose to Oakland to Sacramento. One of the trips continued from Sacramento to Roseville.

Service on the Capitol Corridor has increased from the original three round-trips as follows:

- 4/2/95 Oakland-San Jose, one round-trip discontinued (except on Saturday northbound and Friday, Saturday, Sunday southbound).
- 4/14/96 Oakland-Sacramento, fourth round-trip added.

- 6/17/96 Oakland-San Jose round-trip that was discontinued April 2, 1995, is restored.
- 1/26/98 Train to Roseville extended to Colfax.
- 10/25/98 Oakland-Sacramento, fifth round-trip added.
- 2/21/99 Oakland-Sacramento, sixth round-trip added.
- 2/27/00 Oakland-Sacramento, seventh round-trip added.
- 2/27/00 Oakland-San Jose, fourth round-trip added.
- 2/27/00 Colfax round-trip cut back to Auburn.
- 4/29/01 Oakland-Sacramento, eighth and ninth round trips added.
- 4/29/01 Oakland-San Jose, fifth and sixth round trips, weekends only, added.
- 10/27/02 Oakland-Sacramento, tenth round trip, weekdays only, added.
- 1/6/03 Oakland-Sacramento, eleventh round trip, weekdays only, added.
- 4/28/03 Oakland-Sacramento, twelfth round trip, weekdays only, added.

Figure 7A is the Capitol Corridor route map, including the connecting bus services.

CAPITOL CORRIDOR JOINT POWERS AUTHORITY

Local agencies have always had an active role in planning and promoting the Capitol Corridor. Initially the ACR Policy Advisory Committee, formed as part of the ACR 132 study, acted in an advisory capacity to make recommendations about the route.

Chapter 263, Statutes of 1996 (SB 457 - Kelly), allowed the State to enter into an interagency transfer agreement (ITA) with a joint powers authority to assume responsibility for intercity rail services on the Capitol Corridor. The Department and the Capitol Corridor Joint Powers Authority (CCJPA) executed an ITA on July 1, 1998, transferring the responsibilities of management for the Capitol Corridor to the CCJPA. The BART General Manager and designated BART staff provide administrative support to the CCJPA.

Pursuant to the ITA, BT&H has responsibility for allocating operating funds to the CCJPA. BT&H also reviews and approves the CCJPA's business plan that includes future service levels and funding needs.

Chapter 263 specified the composition of the CCJPA. The CCJPA Board must have the following members: six representatives from the BART Board of Directors (two residents each from Alameda County, Contra Costa County, and the City and County of San Francisco); two members each from the Board of Directors of the Sacramento Regional Transit District, the Board of Directors of

the Santa Clara Valley Transportation Authority, the Yolo County Transportation District, the Solano Transportation Authority, and the Placer County Transportation Planning Agency.

ROUTE DESCRIPTION

The Capitol Corridor extends 169 rail miles from Auburn to San Jose (35 miles east of Sacramento and 134 rail miles west of Sacramento to San Jose.) Except for three miles of right-of-way owned by the Peninsula Corridor Joint Powers Board, UP owns this entire route. Amtrak operates the Capitol Corridor under provisions of its contract with UP, and Amtrak shares partial responsibility with the State for funding the Route. Figure 7B describes the current ownership, segment mileage, and track and signal characteristics of the Capitol Corridor.

Figure 7B

CAPITOL CORRIDOR OWNERSHIP AND TRACK CHARACTERISTICS								
Between	Mile Post	And	Mile Post	Route Miles	Owner of Track	*No. of Tracks	Max. Speed	Signal System
San Jose	47.3	Santa Clara	44.4	2.9	PCJPB	3	60	CTC
Santa Clara	44.4	Newark	31.4	13.8	UP	1	70	CTC
Newark	34.9	Niles Tower	29.7	5.2	UP	1	79	CTC
Niles Tower	29.7	West Elmhurst	13.5	16.2	UP	1	70	CTC
West Elmhurst	13.5	Oakland Jack London Square	7.0	6.5	UP	2	60	ABS
Oakland - Jack London Square	7.0	Oakland 10th Street	**4.2	2.8	UP	2	40/60	CTC
Oakland 10th Street	**2.2	Martinez	31.7	29.5	UP	2	40/60	CTC
Martinez	31.7	Davis	75.5	43.8	UP	2	79	CTC
Davis	75.5	West Causeway	81.1	5.6	UP	2	79	CTC
West Causeway	81.1	East Causeway	85.2	4.1	UP	1	79	CTC
East Causeway	85.2	Sacramento River	88.4	3.2	UP	2	79	CTC
Sacramento River	88.4	Sacramento	89.0	0.5	UP	2	30	CTC
Sacramento	89.0	Elvas	91.8	2.8	UP	2	35	CTC
Elvas	91.8	Roseville	106.6	14.8	UP	2	60	CTC
Roseville	106.6	Auburn	124.2	17.6	UP	1	50	ABS
Total				169.3				
*General number of mainline tracks								
**Mileage represents distance between mile posts to an approximate location at 10th Street in Oakland								
Owners:								
PCJPB - Peninsula Corridor Joint Powers Board								
UP - Union Pacific Railroad Company								
Signal Systems:								
ABS - Automatic Block Signals - Possession of a segment of track (block) is protected by a wayside signal. Switches must be thrown manually by train crews entering sidings.								
CTC - Centralized Traffic Control - Wayside signals protect possession of blocks. Signals and powered switches are also remotely controlled from the dispatching center to direct the movement of trains.								

Scheduled train running times between Oakland and Sacramento vary from one hour fifty-seven minutes to two hours ten minutes. Overall speeds are 41 mph to 46 mph. Capitol Corridor train-running times between Oakland and San Jose vary from 75 to 85 minutes and the average overall speed varies from 32 mph to 36 mph. Running times between Sacramento and Auburn are 62 and 65 minutes, with overall average speeds of 34 mph and 32 mph.

CONNECTING BUS SERVICES

The network of buses connecting with the Capitol Corridor is important to the route's success because the buses significantly extend the route's range as far north as McKinleyville, north of Eureka and Redding, northeast to Grass Valley/Nevada City, Reno, Lake Tahoe and Carson City, and south to Monterey and Santa Barbara.

The CCJPA, contracts with Amtrak for the provision of dedicated feeder bus services, and Amtrak then contracts with bus operators. The bus routes function as direct parts of the Amtrak system, with coordinated connections, guaranteed seating, integrated fares and ticketing procedures, and inclusion in Amtrak's central information and reservation system in the same manner as the trains.

Unlike trains, bus operating costs are borne entirely by the State, although much of the bus costs are offset by the revenues they generate.

A mileage/yield-based portion of the revenue from each through bus/rail ticket is allocated to the bus portion of the trip. This allocated revenue is then transferred to the bus, thereby reducing the actual State expense.

Below is a listing of the Capitol Corridor bus routes and their origins/destinations and main stops, as well as the San Joaquin bus routes that also connect to the Capitol Corridor. Cities that are Capitol Corridor train connection points are in *italics*.

Capitol Corridor Bus Routes

Route 20–High Sierra/Sierra Foothills

Sacramento-Grass Valley-Nevada City-Reno-Sparks

Route 21–Monterey Bay/Central Coast

Oakland-San Jose-Santa Cruz-Monterey-Salinas-San Luis Obispo-Santa Barbara

Route 23–Lake Tahoe

Sacramento-Stateline Casinos-Carson City

Route 35–Santa Cruz (Highway 17 Express)

San Jose-Santa Cruz

San Joaquin Route Bus Routes

Route 3–Sacramento Valley

Sacramento-Chico-Redding

Route 7–North Bay/Redwood Empire

Martinez-Vallejo-Napa-Santa Rosa-Ukiah-Eureka-McKinleyville

Amtrak Bus Route

Route 99–Trans Bay

Emeryville-San Francisco (Connects to the San Joaquins, Capitol Corridor, Coast Starlight and California Zephyr trains)

PERFORMANCE

Figure 7C shows ridership and financial performance data on an annual (State FY) basis from the start of State-supported Amtrak rail passenger service in 1991-92 through 2003-04. Ridership and revenues have increased over that period, as have expenses, loss, and State cost. When Capitol Corridor service started, Amtrak had already begun increasing costs that are included in the farebox ratio. Also, the Capitol Corridor service is still relatively new and has added frequencies at a relatively fast rate. Consequently, the Capitol Corridor service has never had as high a farebox ratio, primarily due to its shorter trip length, when compared to the two other routes. The Capitol Corridor farebox ratio (35.5 percent in 2002-03) has ranged between a high of 43.4 percent in 1995-96 and a low of 29 percent in 1996-97.

On-time performance on the Capitol Corridor was fairly low during the initial years of the service. With the completion in early 1999 of major track and signal work over much of the route, on-time performance improved considerably. In Amtrak's 2003-04 fiscal year, the on-time performance has averaged 85.6 percent. The planned new trackage and signal improvement projects between Oakland and San Jose will improve the Capitol Corridor's reliability and on-time performance by facilitating both passenger and freight train movements and by providing more opportunities for trains to pass each other.

Figure 7C

CAPITOL CORRIDOR										
Annual Operating Performance - State Fiscal Years										
State Fiscal Year	Notes	Ridership Data		Financial Data for Operations						
		Ridership	PM/TM	Revenue	Expense	Loss	State Cost	Amtrak Cost	Train Loss per PM	Farebox Ratio
			(F1)		(F2)		(F3)	(F4)	(F5)	(F6)
1991-92	(S1)	173,672	96.3	\$ 1,973,255	\$ 4,848,967	\$ 2,875,712	\$ 1,592,907		15.0¢	40.7%
1992-93		238,785	67.7	\$ 2,970,103	\$ 8,333,093	\$ 5,362,990	\$ 6,712,017		20.1¢	35.6%
1993-94		364,070	101.2	\$ 3,598,978	\$ 9,911,735	\$ 6,312,757	\$ 6,714,761	\$ 1,697,460	15.7¢	36.3%
1994-95	(S2)	349,056	101.7	\$ 3,757,146	\$ 9,678,401	\$ 5,921,255	\$ 6,012,315	\$ 1,584,692	14.9¢	38.8%
1995-96	(S3)	403,050	111.9	\$ 4,805,072	\$ 11,077,485	\$ 6,272,413	\$ 6,434,940	\$ 273,025	14.9¢	43.4%
1996-97		496,586	111.3	\$ 5,938,072	\$ 20,509,999	\$ 14,571,927	\$ 9,701,519	\$ 4,871,345	31.6¢	29.0%
1997-98	(S4)	484,458	109.4	\$ 6,212,150	\$ 20,597,133	\$ 14,384,983	\$ 10,830,123	\$ 3,555,755	31.8¢	30.2%
1998-99	(S5)	515,768	90.8	\$ 6,939,702	\$ 22,343,915	\$ 15,404,213	\$ 14,543,722	\$ 969,291	32.6¢	31.1%
1999-00	(S6)	684,334	90.1	\$ 8,546,453	\$ 25,048,098	\$ 16,501,645	\$ 17,120,868	\$ 194,932	28.2¢	34.1%
2000-01	(S7)	1,030,837	106.0	\$ 11,091,742	\$ 27,670,759	\$ 16,579,017	\$ 18,558,681	\$ 92,014	21.0¢	40.1%
2001-02		1,090,713	96.9	\$ 12,321,755	\$ 32,683,794	\$ 20,362,039	\$ 21,263,811	\$ 99,311	25.3¢	37.7%
2002-03	(S8)	1,129,683	92.0	\$ 12,550,182	\$ 35,390,303	\$ 22,840,121	\$ 22,413,396	\$ 170,254	28.1¢	35.5%
2003-04		1,148,047	86.3	\$ 13,012,806	\$ 36,231,990	\$ 23,219,184	\$ 23,168,004	\$ 9,584	28.0¢	35.9%
TOTAL		8,109,059		\$ 93,717,416	\$ 264,325,672	\$ 170,608,256	\$ 165,067,064			

(S1) Service started 12/12/91 with three State-supported round trips between Sacramento and San Jose, with one round trip extended to Roseville. Data is for six and one-half months only.

(S2) One round trip discontinued 4/2/95 between Oakland and San Jose (except on Saturday northbound and Friday, Saturday, Sunday southbound.) Feeder bus connection substituted for train.

(S3) Fourth round trip added 4/14/96 between Sacramento and Oakland. Effective 6/17/96, round trip referred to in (S2) above restored to daily service between Oakland and San Jose.

(S4) Effective 1/26/98, the round trip that previously originated and terminated at Roseville was extended to Colfax.

(S5) Fifth round trip added 10/25/98 and sixth round trip added 2/21/99 between Sacramento and Oakland.

(S6) Effective 2/27/00, seventh round trip added between Sacramento and Oakland; fourth round trip added between Oakland and San Jose; the round trip to Colfax was cut back to Auburn.

(S7) Effective 4/29/01, eighth and ninth round trips added between Sacramento and Oakland; fifth and sixth round trips added between Oakland and San Jose on weekends only.

(S8) Effective 10/27/02, tenth round trip added; effective 1/6/03, eleventh round trip added; effective 4/28/03, twelfth round trip added. These additional trains operate weekdays only between Sacramento and Oakland.

(F1) Passenger-miles per train mile (PM/TM), a measure of the average load on a train over its entire route.

(F2) Through September 1995, all trains billed on long term avoidable cost basis; includes cost of connecting buses. Effective October 1996, all trains billed on Full Cost (Train, Route and System) Basis.

(F3) Though September 1995, State cost was 65 percent of train operating loss. Between October 1995 and September 1996, State cost was 100 percent of train operating loss. Between October 1996 and September 1997, State cost was 55 percent of the train operating loss. Effective October 1997, State is billed contractually specified percentages of most individual cost elements, plus a fixed amount for certain other cost elements. Also includes State payment of costs of special agreements with Amtrak for use of equipment, special payments for service continuation and State payment for entire net cost of all connecting bus routes. Effective October 1999, the Capitol Corridor Joint Powers Authority (CCJPA) and Amtrak entered into a 12 month fixed price operating contract, including all train and bus services. The State Costs shown represent the fixed price contract payment less any performance assessments.

(F4) Beginning in State Fiscal Year 1993-94, Amtrak cost is based on billings submitted and reflects cost bases and Amtrak shares as stated in notes (F2) and (F3) above. However, Amtrak does not include the unbilled Amtrak share of fixed cost elements. Prior to FY 1993-94, data to calculate Amtrak cost is not available. Does not represent the difference between Loss and State Cost, as the latter includes bus expenses and equipment capital costs not included in Amtrak costs.

(F5) Train loss (deficit) per train passenger-mile. Connecting buses not included in loss per passenger mile data.

(F6) Farebox Ratio, the ratio of Revenue to Expense.

OPERATIONAL AND SERVICE IMPROVEMENTS

The focus of the CCJPA’s short-term operating strategies is to improve train reliability and customer service, amenities, reduce travel times, and increase the cost-effectiveness of the service. These strategies are complementary, as an improvement in on-time performance combined with reduced travel times positively impacts customer satisfaction that should increase ridership and revenue. Cost efficiencies should reduce operating expenses, and thereby should improve the farebox ratio and service performance.

Annual operational and service improvement strategies are detailed in the *Capitol Corridor Business Plan Update FY 03/04-04/05* produced by the CCJPA and will be discussed in future business plans. For example, the Business Plan discusses action plans, fares, service amenities, food services and equipment, and marketing strategies.

POTENTIAL TRAIN SERVICE IMPROVEMENTS

The Department, in conjunction with Amtrak and the Capitol Corridor Joint Powers Authority (CCJPA), anticipates eventual demand for eighteen round-trips on the Capitol Corridor between Sacramento and Oakland. The Department’s and the CCJPA’s specific proposed timing for new frequencies differ, as noted below.

It is important to note that start-up dates for service are based on projected service needs. Demonstrated ridership demand, approval from Amtrak and the relevant railroad(s), availability of operating and capital funding and equipment, and completion of necessary capital projects will affect when each of the service improvements can be implemented.

The Department’s proposed expansion of the Capitol Corridor is as follows:

- | | |
|---------|--|
| 2005-06 | San Jose-Oakland, fifth, sixth and seventh round-trips.
Sacramento-Roseville, second, third, and fourth round-trips.
Roseville-Auburn, second and third round trips. |
| 2006-07 | Sacramento-Oakland, thirteenth and fourteenth round-trip. |
| 2007-08 | Oakland-Sacramento, fifteenth and sixteenth round-trips.
San Jose-Oakland, eighth and ninth round trips. |
| 2012-13 | Oakland-Sacramento, seventeenth and eighteenth round-trips.
Sacramento-Roseville, fifth and sixth round trips.
Roseville-Auburn, fourth round trip. |
| 2013-14 | Sacramento-Roseville, seventh and eighth round trips. |

The CCJPA has proposed an enhanced level of service between certain points for the 10-year period of the State Rail Plan. Specifically, the CCJPA proposes operation of the following number of round-trips between the points shown.

Between	In Five Years	In Ten Years
San Jose and Oakland	11	16
Oakland and Sacramento	16	18
Sacramento and Roseville	4	10
Roseville and Auburn	3	4

CHAPTER VIII

POTENTIAL NEW SERVICES

HIGH-SPEED RAIL

BACKGROUND

High-speed rail has been studied in California for over a decade. The Department participated in a number of studies in the late 1980s and early 1990s. The Department was a member of the Los Angeles-Fresno-Bay Area/Sacramento High-Speed Rail Corridor Study Group. The group published its report in 1990 as required by Chapter 197, Statutes of 1988 (AB 971 - Costa). Under Chapter 1104, Statutes of 1990 (SB 1307 - Garamendi), the Department in 1991, completed a work plan for a feasibility study for the development of an integrated public, private, or combined public/private high-speed intercity and commuter rail system. Under Proposition 116, the Department completed a preliminary engineering and feasibility study on high-speed service between Bakersfield and Los Angeles.

Senate Concurrent Resolution 6 (1993) established the California Intercity High-Speed Rail Commission. This Commission, while using some Department staff resources, was not part of the Department. The Final Report of the Commission was sent to the Legislature at the end of 1996 and indicated that high-speed rail is technically, environmentally, and economically feasible, and once constructed, could be operationally self-sufficient. The Commission recommended a San Francisco/San Jose/Sacramento-Central Valley-Los Angeles-San Diego alignment. The commission also recommended using either very high-speed technology of steel-wheel-on-steel-rail or magnetic levitation (maglev).

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

The California High-Speed Rail Act, enacted by Chapter 796, Statutes of 1996 (SB 1420 - Kopp and Costa), established the California High-Speed Rail Authority (CHSRA) to direct the development and implementation of intercity high-speed rail service. The act defined high-speed rail as "intercity passenger rail service that utilizes an alignment and technology that make it capable of sustained speeds of 200 miles per hour or greater."

Chapter 791, Statutes of 2000 (AB 1703 - Florez), modified the CHSRA's exclusive authorization and responsibility for planning, construction, and operation of high-speed passenger train service to cover speeds exceeding 125 miles per hour. Previously, the CHSRA had such authorization and responsibility for speeds exceeding 100 miles per hour. AB 1703 also extended the tenure of the CHSRA through 2003. Then in Chapter 696, Statutes of 2002 (SB 796 - Costa) repealed the sunset date for the CHSRA, making it a permanent

authority. The CHSRA is composed of nine members. The Governor appoints five members, the Senate Committee on Rules appoints two members, and the Speaker of the Assembly appoints two members.

The CHSRA completed and presented to the Legislature and Governor in June 2000 its Business Plan, *Building a High-Speed Train System for California*. The Business Plan found that a high-speed train system is a smart investment in mobility, an evolutionary step for transportation, and a project in keeping with California's standards for environmental quality and economic growth. The Business Plan determined that the next project step is to initiate a formal environmental clearance process with the development of a State-level program environmental impact report (EIR). The further engineering and environmental analyses that are part of the initial EIR will define with greater specificity the high-speed train technology, corridors and station locations included in the business plan. Also, the official input of federal, State and local agencies, required during this phase, will help to further specify the capital costs of the project.

In the Business Plan, the CHSRA also recommended that the Governor and Legislature take the following actions:

- Increase funding and accelerate planning and programming for intercity and commuter rail improvements that can provide enhanced, higher-speed service to Californians earlier and ultimately become part of the high-speed train network. These improvements should occur concurrent with the environmental studies and engineering work on the high-speed train network.
- Begin an aggressive statewide effort to increase federal funding for both conventional and high-speed trains in California. In addition, this effort should include working with the Federal Railroad Administration (FRA) and high-speed train manufacturers to resolve safety and compatibility issues.
- Encourage state, regional and local entities to include high-speed trains in their planning for the future.

To implement the environmental process, the CHSRA prepared a Draft Program California Environmental Quality Act (CEQA) Program Environmental Impact Report (EIR) and a National Environmental Policy Act (NEPA) Tier 1 Environmental Impact Statement (EIS). The CHSRA is the state lead agency for CEQA and the FRA is the federal lead agency for NEPA. The draft program-level EIR/EIS was released on January 27, 2004. The CHSRA conducted public hearings on the draft EIR/EIS throughout the State. The public comment period concluded on August 31, 2004. Staff recommendations on preferred route alignments and station locations are under review by the Authority.

In releasing the draft EIR/EIS, the CHSRA stated:

The Draft Program EIR/EIS shows that the proposed high-speed train system could carry up to 68 million passengers by 2020, and would increase mobility, could help relieve highway congestion, help protect California’s environment and boost the State’s economy.

The comprehensive study describes the potential environmental impacts of three transportation system alternatives and compares how well they would meet California’s current and future transportation needs. The alternatives studied are:

- The “No Project/No Action” alternative, examining the state’s current transportation system, including highway and airport improvements planned to be operational by 2020.
- High-Speed Trains: a proposed new network of electrically powered trains, at least 700 miles long, connecting California’s major metropolitan areas and traveling 220 miles per hour.
- The “Modal” alternative, evaluating additional improvement to existing highways and airports that could serve the same travel demand as the proposed high-speed train system.

Based on the analysis, the California High-Speed Rail Authority and the Federal Railroad Administration have identified the high-speed train system as the preferred system alternative to meet California’s future intercity travel demand.

The EIR/EIS will enable the Authority to select a preferred alignment, station locations and technology. It will allow the CHSRA to begin corridor preservation for the system and, if funding is available, purchase right-of-way where needed.

The statewide system cannot be constructed all at once. If the CHSRA determines funding is available and the project should move forward, an implementation/phasing plan will be developed and early implementation pieces of the system will be identified for project-specific environmental work and construction.

Figure 8A displays the high-speed rail alignments being studied in the Draft Program EIR/EIS.

Figure 8A



Funding for these environmental studies included:

- \$5 million from the Traffic Congestion Relief Fund (TCRF) – Chapter 91, Statutes of 2000 (AB 2928, Torlakson).
- An additional \$2.5 million from the TCRF for studies of the Los Angeles-Orange County-San Diego segment.
- \$2.5 million in federal next generation high-speed rail funds from the FY 2002 and 2003 Transportation Appropriations Act (PL 107-87 and 108-7).
- \$500,000 from Proposition 116 funds for studies of the Los Angeles-Bakersfield segment.
- \$5.8 million from the State Highway Account in the Budget Act of 2002.
- \$1.8 million from the Public Transportation Account in the Budget Act of 2003.

Chapter 697, Statutes of 2002 (SB 1856 - Costa) placed a nearly \$10 billion general obligation bond on the November 2004 ballot to fund the planning and construction of a high-speed rail transportation system for California. This measure would represent the first step in financing the planning and construction of the CHSRA's high-speed rail system. Of this amount, \$9 billion is for the high-speed rail project, and \$950 million is for capital projects on intercity rail, commuter rail, and urban passenger services throughout the state to provide connectivity to the high-speed rail system. The measure specifies that the first segment of the system must be from San Francisco Transbay Terminal to Los Angeles Union Station. The bond funds cannot be used for more than one-half of the total costs of construction for track and stations of the system. The other one-half of the funds can come from other private and public funds, including federal funds.

However, in response to State funding shortfalls, Chapter 71, Statutes of 2004 (SB 1169) was passed which deferred the bond measure from the November 2004 ballot to the November 2006 ballot, and specifies that the bonds cannot be issued before January 2008.

On March 2, 2004, voters approved Regional Measure 2 (RM2) raising the toll on seven state-owned toll bridges by \$1. \$2.5 million of RM2 funds may be used by the Metropolitan Transportation Commission and the CHSRA to study proposed alignments for Bay Area access to the CHSRA's high-speed rail system.

MAGNETIC LEVITATION TECHNOLOGY DEPLOYMENT PROGRAM

Maglev is an advanced technology in which magnetic forces lift, propel, and guide a vehicle over a guideway. Utilizing state-of-the-art electric power and control systems, this configuration eliminates contact between vehicle and guideway and achieves speeds of up to 310 mph. In 1989, a 19.5-mile testing track was put in service in Emsland, Germany. The system is still in operation and carrying visitors. In 2002, a 19-mile Transrapid Maglev line was put in operations in Shanghai, China. The line connects Pudong International Airport with Shanghai subway station in the financial district. The Shanghai line has been operating at a maximum speed of 310 mph.

The Maglev Deployment Program was established in 1998 by the Transportation Equity Act for the 21st Century (TEA-21; Section 1218 of Public Law 105-178) with the purpose of demonstrating the feasibility of Maglev technology in the United States. \$55 million was available to fund pre-construction planning activities for FFY 1998-2003. An additional \$950 million was authorized for the construction and deployment of selected projects. Congress is currently reviewing the Maglev Deployment Program as part of the reauthorization of TEA-21.

In 1999, the U.S. Department of Transportation (USDOT) awarded grants to seven states and authorities for pre-construction planning for Maglev high-speed ground transportation. The Federal Railroad Administration (FRA) selected projects in Southern California, Florida, Georgia, Louisiana, Maryland, Nevada and Pennsylvania for funding. Each of the grants provided the selected projects with sufficient federal funds to pay up to two-thirds of the cost of preliminary engineering, market studies, environmental assessments, and financial planning needed to determine the feasibility of deploying a Maglev project.

In 2001, USDOT selected two projects, one in Maryland and one in Pennsylvania, to continue to the next stage of the competition. Neither the Southern California nor the Nevada Maglev Project was selected to go forward in the national competition for construction funding. However, Congress has continued to provide planning grants to the Southern California and Nevada projects in FFYs 2001-2004, and Nevada recently received additional funding in FFY 2005. Of the original seven projects, funding was discontinued on three of them (Florida, Georgia, and Louisiana) in FY 2002.

These projects still have significant hurdles to overcome. Their sponsors will need to complete engineering work and environmental documentation to further the initial concept design plans. As the projects were not selected for Federal construction funding, a principal funding source remains to be identified. Coordination must continue with the Department, railroad operators and local agencies along the corridor.

Southern California Maglev Project

The initial 92-mile corridor study area of the Southern California Maglev Program extends from Los Angeles International Airport (LAX) via Los Angeles Union Passenger Terminal (LAUPT), east to Ontario International Airport and on to March Inland Port in Riverside County, a distance of approximately 92 miles. Figure 8A displays the proposed Southern California Maglev route. The Southern California Association of Governments (SCAG) is the project sponsor.

By 2030, the population of Southern California will grow from 17 million to 23 million people. Demand at the region's airports will increase to approximately 170 million annual passengers. Air cargo volume will triple to nine million annual tons. The prospect of these increases in population, employment and air travel demands led SCAG to adopt a high-speed intra-regional Maglev system connecting regional airports as part of a decentralized Aviation System Plan. This Plan was adopted as part of its Regional Transportation Plan in 1998.

On June 30, 2000, the Southern California Maglev Deployment Project sponsors submitted a Project Description to the FRA in competing for Federal Maglev funding. The grant application to the FRA described an intra-regional Maglev system, of which the first line to be considered was on the LAX to March Inland Port Corridor. Highlights of the Project Description are:

- The proposed system design is based upon Maglev technology developed by the German consortium Transrapid.
- The proposed project serves a very dense corridor defined by the Federal Government as a Corridor of National Significance. By 2020, about one million long distance trips would be made in the corridor. The system would serve approximately 134,000 riders per day by 2020. Travel-time savings from one end of the line to the other are estimated to be 80 minutes.
- The 92-mile system was estimated to cost about \$8 billion to construct. Approximately 24 percent of this cost was for the system elements: vehicles, communications, propulsion, and operation control. The cost of the guideway was about 43 percent of the total cost. Stations, yards and shops, right-of-way and other civil works comprise the remainder of the project costs.

With the FY 2001 Federal funding, SCAG performed additional studies on this Project, including evaluation of the impacts of the Project on use of highway and railroad rights-of-way, on Los Angeles Union Station, and on the Metrolink commuter rail system. SCAG also completed further work in the areas of technology transfer agreements, cost and revenue projections, financial plan, public/private partnering agreements, environmental studies and public participation.

In December 2002, SCAG's Regional Council selected a 54-mile segment of the LAX-March Inland Port Corridor as the Initial Operating Segment (IOS) going from Ontario Airport to West Los Angeles. The project is currently beginning pre-construction work, including completion of more detailed engineering, a State Environmental Impact Report, and a Federal Environmental Impact Statement. The joint powers authority for the IOS is being developed. This phase, budgeted at \$15 million, will take about 18 months to complete.

In FY 2001, SCAG received \$877,000 in Federal Maglev funding. In FY 2002, SCAG received \$1.0 million in Federal Maglev funding for continued corridor planning activities. In FY 2003, an additional \$500,000 in Federal Maglev funding was provided to support further planning studies. In FY 2004, SCAG received an additional \$1.0 million in Federal Maglev funding.

In addition to the project described above, SCAG has undertaken three additional Maglev feasibility studies along other heavily congested corridors. They are: 1) Los Angeles to Palmdale in Antelope Valley, along the SR-14 and I-5 or I-405 freeway corridors; 2) LAX to south Orange County, along the I-405 Freeway; and 3) the Orange Line from downtown Los Angeles to central Orange County following the former Pacific Electric Railway corridor.

From these studies, SCAG has concluded that the Maglev projects can be self-funded through a public-private partnership, where the public sector will donate land and the private sector will construct and operate the system. Additionally, innovative funding strategies, such as Federal Transportation Infrastructure Finance and Innovation Act (TIFIA) loans and private investment bonds can be used to finance this project. The first of three joint exercise of powers authorities (JPAs) has been formed to deploy the Maglev projects in Southern California. The Orange Line Development Authority has been organized by cities along this corridor to advance the downtown Los Angeles to Orange County Maglev system.

Las Vegas-Anaheim Maglev Project

The California-Nevada Super Speed Train Commission (CNSSTC) was formed in 1988 to promote the development of a 269-mile maglev system connecting Las Vegas with Anaheim. The CNSSTC and its private sector partner, American Magline Group, proposed a 40-mile segment from Las Vegas to Primm, on the California border, for its FRA application in 2000. A short segment of the project was chosen because of the difficulty in raising funds for the entire 269-mile project. Figure 8A displays the proposed Las Vegas to Anaheim route.

The route travels between two fast-growing and heavily populated regions of the U.S. The project would have a total of five segments: Las Vegas to Primm, Primm to Barstow, Barstow to Victorville, Victorville to Ontario, and Ontario to Anaheim. There would be stops at each of the endpoints of the segments, for a total of at least six stops. A key advantage of the system is the alignment provided

by the Interstate Highway 15 right-of-way. If available, this alignment would minimize the need for property acquisition and provides the least complicated construction scenario possible.

To date the project has received a total of \$9.0 million in Federal funding from FY 1999 through FY 2005: \$1.4 million in FY 1999; \$2.0 million in FY 2000; \$900,000 million in FY 2001; \$1.2 million in FY 2002; \$1.5 million in FY 2003; \$1.0 million in FY 2004; and \$1.0 million in FY 2005.

The CNSSTC has done a number of studies to date. They prepared and submitted to USDOT a Project Description report on the Las Vegas to Primm segment in 2000. Next the CNSSTC produced the Las Vegas-Primm/Barstow Supplemental Project Description in August 2002. That report presents projected physical infrastructure, ridership, costs, benefits and related information for the extended segment from Las Vegas to Barstow via Primm. The report estimated capital costs for the segment in 2000 dollars to be \$5.65 billion.

In May 2004, the Federal Railroad Administration agreed to prepare a programmatic environmental impact statement (PEIS) for the project, in cooperation with the Nevada Department of Transportation. The PEIS will cover the entire corridor between Las Vegas and Anaheim, and will include a site-specific construction level program environmental impact report for the Las Vegas to Primm, Nevada segment. As part of the PEIS, five public meetings were held in June in key cities along the route. The CNSSTC has prepared as part of the PEIS: a preliminary report that summarizes the results of the public meetings, a purpose and needs statement, and a work plan.

The California Department of Transportation will be the lead agency to review environmental documents under the California Environmental Quality Act (CEQA). However, the current PEIS does not trigger CEQA review as it is not considered a “project” under CEQA definition. Only site specific environmental work on corridor segments in California will trigger CEQA.

PROPOSED INTERCITY RAIL ROUTES

This section includes a description of the five new routes that the Department proposes in this 10-year plan. The routes are discussed in order of potential implementation by year: San Francisco to Los Angeles; Sacramento to Reno; San Francisco to Monterey; Los Angeles to Coachella Valley; and Sacramento to Redding. Included for each route is a summary of current service to the area, recent studies of the route, and the Department’s current service proposal. The implementation of all new service is subject to demonstrated ridership demand, approval from Amtrak and the relevant railroad(s), availability of operating and capital funding and equipment, and completion of necessary capital projects. Figure 8B displays the new routes proposed for service within the time frame of the State Rail Plan.

SAN FRANCISCO TO SAN LUIS OBISPO (AND LOS ANGELES) VIA COAST ROUTE

Currently only one daily round-trip Coast Starlight train connects Oakland and San Jose with Los Angeles via the Coast with intermediate stops including Salinas, Paso Robles, San Luis Obispo and Santa Barbara on its route from Seattle. Additionally, one round-trip Amtrak Thruway bus originating in Paso Robles connects the Capitol Corridor to the Pacific Surfliner Route. Ridership on this bus route was 12,000 in 2003-04. A second round-trip bus originating in San Luis Obispo started on November 17, 2004 with the inauguration of the second Los Angeles-San Luis Obispo Pacific Surfliner. Ridership on this bus has been promising.

There has been interest for many years in providing additional Coast Route service to better link California's two largest metropolitan areas. In September 1992, H.R. 39 was passed requesting that an intercity rail corridor upgrade study on the Coast Corridor be conducted by the regional transportation planning agencies along the Corridor in cooperation with the Department. As a result, concerned local agencies formed the Coast Rail Coordinating Council (CRCC) that is currently staffed by the San Luis Obispo Council of Governments. The *Coast Rail Improvement Study* that was issued in the fall of 1994 resulted from H.R. 39. Then, in 1996 the *Coast Route Infrastructure Assessment Report* was completed. One of the main goals of the CRCC is to "close the gap" in state-supported train services by connecting downtown Los Angeles and downtown San Francisco with daily train services.

In 1999, the Coordinating Council received an \$80,000 federal State Planning and Research grant to conduct a *Coast Daylight Implementation Plan*. The Plan, completed in June 2000, envisions daily service operating on Caltrain trackage from San Francisco to San Jose, and then on UP trackage to Moorpark, and then on Metrolink trackage to Los Angeles. Stations are planned in San Francisco, Millbrae, Palo Alto, Mountain View, Santa Clara, San Jose, Gilroy, Pajaro, Salinas, King City, Paso Robles, San Luis Obispo and south to Los Angeles stopping at existing Pacific Surfliner stations. The study includes operating costs, but no capital costs.

In Fall 2004, the CRCC released the Capacity Analysis for the "Coast Daylight" service. The analysis identified several capital improvements that would be helpful in order to increase train frequencies on the Coast Route. The CRCC is now working with Amtrak, Union Pacific, and the Department to identify how to move forward since capital funding for the improvements is extremely limited.

Figure 8B



The Department's 10-year operating plan includes one round-trip train between San Francisco and San Luis Obispo, starting in 2006-07, with a second train in 2012-13. They will provide through train service between San Francisco and Los Angeles, and would be operated from San Luis Obispo to Los Angeles as an extension of the new Pacific Surfliner train added on November 17, 2004.

SACRAMENTO TO RENO

Amtrak's California Zephyr and connecting buses to the Capitol Corridor and San Joaquins serve Reno and intermediate I-80 Corridor points. The California Zephyr makes stops at Reno, Truckee, Colfax, Roseville and Sacramento once daily in each direction on its route to Chicago. Also, buses connect to four San Joaquins and four Capitol Corridor trains and serve Reno/Sparks, Truckee, Soda Springs, Colfax, Auburn, Rocklin, Roseville and Sacramento. Ridership on this bus route was 41,000 in 2003-04.

In August 1995, the Department and the Nevada Department of Transportation published the *Sacramento-Tahoe-Reno Intercity Rail Study*. One goal of the study was to examine the feasibility of expanding passenger rail service along the I-80/Tahoe corridor from Sacramento to Truckee and Reno/Sparks on the UP line on which the California Zephyr currently operates. A number of scenarios were studied that involved extending varying numbers of Capitol Corridor trains from Sacramento to Reno/Sparks.

The most significant finding of the study was that all of the scenarios to Reno/Sparks would improve the overall Capitol Corridor farebox return. That is, while net costs to the State would increase, the ratio of revenues to costs would improve with the extension of the Capitol Corridor to Reno/Sparks.

The Capitol Corridor Joint Powers Authority and the Placer County Transportation Planning Agency are currently in the process of completing a concept study to extend the Capitol Corridor to Reno that will provide current ridership, revenue, and train operating cost estimates for the train extension and the capital cost for necessary station and track improvements. The study is anticipated to be completed in the summer of 2005. Additional coordination between entities in the state of Nevada and California, as well as UP is required to move beyond the conceptual study.

The Department believes this corridor is a good candidate for rail corridor service because: (1) I-80 is extremely congested at tourist peak periods, (2) there is a very strong gaming, skiing and general recreation market in the Reno/Truckee area, and (3) current bus ridership on this route is strong. Another advantage of the route is that Amtrak currently operates the California Zephyr on the route so that stations at the major destination points already exist.

The Department's 10-year operating plan includes the extension of one Capitol Corridor round-trip from Auburn to Reno/Sparks in 2007-08, and a second

round-trip in 2009-10. This rail service would be supplemented by continued operation of existing bus service that runs over the same route as the train, but at other times of the day. This service would require an appropriate level of financial participation from the State of Nevada (and potentially Nevada business interests).

SAN FRANCISCO TO MONTEREY

Currently, only very limited Amtrak service exists between Monterey and San Francisco, and only in conjunction with connecting bus service. The Coast Starlight provides one daily round-trip from Oakland to Salinas, with bus connections to San Francisco from Oakland and to Monterey from Salinas. The Capitol Corridor provides train service from Emeryville /Oakland to San Jose with bus connections to San Francisco from Emeryville and to Monterey from San Jose.

The Transportation Agency for Monterey County (TAMC) has conducted a number of studies on train service from San Francisco to Monterey. The *San Francisco-Monterey Intercity Rail Service Implementation Plan* was completed in January 1998. In 2003, TAMC completed the *Monterey Intercity Rail Project* which includes advanced planning and environmental studies for the route that provide conceptual engineering, cost and environmental documentation for the project.

Several different service options are under consideration by TAMC, including: intercity rail to San Francisco; local rail connections to Caltrain or to proposed intercity rail service; or bus rapid transit. For intercity rail service, TAMC has proposed two round-trips daily between San Francisco and Marina/Seaside/Fort Ord with an additional round-trip on weekends to start in 2008-09. Intermediate stops are planned at Millbrae (San Francisco Airport), Palo Alto (possible stop), San Jose Diridon, Pajaro, and Castroville. Discussions are underway with the City of Monterey to extend service directly to Monterey. Bus connections would be provided to downtown Monterey, the Aquarium, hotels and other tourist destinations.

The proposed intercity route would use the current Caltrain owned right-of-way between San Francisco and San Jose. The route between San Jose and Castroville is owned by the UP and used for passenger service by Caltrain to Gilroy and by the Coast Starlight to Castroville (and beyond to Los Angeles). TAMC purchased the Monterey Branch Line between Castroville and the Seaside City limits from the UP in 2003; the portion from Seaside to Monterey is already owned by these cities. Currently there is no rail passenger service on this branch line.

The Monterey Branch Line requires substantial capital rehabilitation. Approximately \$4.0 million remains in Proposition 116 funds that can be used for line rehabilitation. TAMC has previously secured \$2.2 million in state and federal funds, and estimates total project capital costs (not including equipment) at

\$38 million. TAMC is pursuing federal new starts funding for the remainder of the capital costs.

TAMC is also working with Caltrain to extend commuter rail service to Salinas from its current terminus in Gilroy. This extension would serve the new stations in Pajaro and Castroville that would also be used by the proposed new intercity rail service to Monterey.

The Department believes there are several advantages to this service, including: (1) Monterey is an important tourist destination that currently has very inadequate access via intercity mass transportation, (2) TAMC has strong local support for this service and is working to secure a local transportation sales tax to help support the project, (3) \$14 million in Proposition 116 capital funds were earmarked for this service, (4) most of the proposed route currently has passenger service, and (5) Chapter 103, Statutes of 1999 (SB 886, McPherson) allows TAMC to be a party in an operations contract between the Department and Amtrak.

The Department's 10-year operating plan includes two intercity rail weekday round-trips (and three weekend round-trips) between San Francisco and Marina/Seaside/Fort Ord, to start in 2008-09.

LOS ANGELES TO COACHELLA VALLEY

Currently Amtrak's Sunset Limited provides three-times per week service from Los Angeles to Pomona, Ontario and Palm Springs on its route to New Orleans. San Joaquin trains provide once a day connecting buses to the Coachella Valley. Buses connect from Bakersfield to San Bernardino, Hemet, Palm Springs and Indio. Ridership on this route was 34,000 in 2002-03.

There has been strong local interest in rail service to the Coachella Valley since 1991 when the Riverside County Transportation Commission published the *Los Angeles-Coachella Valley-Imperial County Intercity Rail Feasibility Study* that evaluated the feasibility of operating three daily round-trip State-supported trains on the route. In 1995, the Department published the *Calexico-Coachella Valley-Los Angeles Rail Corridor Study* for the California Transportation Commission.

The most recent study was completed in February 1999. It is titled the *Coachella Valley Passenger Rail Feasibility Study* and was prepared for the Coachella Valley Association of Governments. The study includes operating and capital cost estimates for the route and proposes two daily round-trip trains.

The study proposes operating from Los Angeles to the Coachella Valley using the BNSF alignment between Los Angeles and Colton, and the UP alignment eastward to Indio. Stations are proposed at Los Angeles, Fullerton, Riverside, Palm Springs, Palm Desert and Indio. The study estimates \$9.3 million in capital costs, not including rolling stock. The study proposes local funding for the new

station at Palm Desert. The City of Indio has received a State-matching grant of \$1.5 million to construct its new station.

Advantages of the route are: (1) strong local support and financial commitment, (2) existing moderate bus ridership on the route, with a growing population, and (3) all but one station already exists. A serious impediment to the service is the likely opposition from the UP to additional passenger service along its alignment.

The Riverside County Transportation Commission has undertaken in late 2004, a commuter rail assessment of its entire region and is specifically looking at a route that would link Indio with Riverside and Los Angeles.

The Department's 10-year operating plan includes one round-trip in 2008-09 and a second round-trip in 2012-13.

SACRAMENTO TO REDDING

Connecting buses to the San Joaquin and Capitol Corridor trains currently serve the northern Sacramento Valley. Buses connect to three of the San Joaquins in Stockton, and one in Sacramento, and travel north through Sacramento, Marysville, Chico and Redding. Three Capitol Corridor trains in Sacramento also have a bus connection to Redding. Ridership on this bus route is the second highest of all California dedicated bus routes after Los Angeles-Bakersfield, with 97,000 riders in 2003-04. Additionally, the single daily round-trip of the Coast Starlight connects Redding and Chico with Sacramento, the Bay Area and Los Angeles on its route from Seattle.

The most recent study on the Sacramento-Redding corridor is the *Northern Sacramento Valley Intercity Passenger Rail Study, Interim Findings Report*, produced in December 1995 for the Butte County Association of Governments. The Department has received federal State Planning and Research funding for an updated study that will examine the initiation of State-supported rail corridor service between Sacramento and Redding. The study will begin in the summer of 2005, after selection of a study consultant.

A strong advantage of the route is Amtrak currently operates passenger service, the Coast Starlight, on the route. Stations at the major destination points, except Marysville, already exist. Additionally, the Department believes this corridor is a good candidate for rail service because: (1) it has a fast growing population, (2) Redding represents the urban hub for the northern part of the State, (3) the California State University at Chico is a focus of activity and population, and (4) current bus ridership on this route is substantial.

The Department's 10-year operating plan includes one daily round-trip between Sacramento and Redding in 2009-10 with a second round-trip starting in 2012-13. This rail service would be supplemented by bus service that would run over the same route as the train, but at other times of the day.

LOS ANGELES TO LAS VEGAS

In 1997, Amtrak discontinued the Desert Wind that ran from Los Angeles to Chicago via Las Vegas three times per week. Currently, San Joaquin trains provide connecting buses from Bakersfield to Las Vegas via Lancaster. Ridership on this route was 15,000 in 2003-04.

In 1998, Amtrak announced plans to start service from Los Angeles to Las Vegas with one daily round-trip. However, due to continuing funding shortfalls and increased capital requirements to initiate service, the new service was not implemented.

The Regional Transportation Commission of Southern Nevada is planning to begin a feasibility study on multi-frequency rail service between Las Vegas and the Los Angeles area in early 2005. This study is being funded equally by the Federal Railroad Administration and the State of Nevada. The Department will be working with the Commission on the study that will include ridership, cost and revenue projections; track, station, maintenance facility and property acquisition needs; equipment recommendations; and schedules for planning purposes.

The Department presently includes no operating or capital costs for this service in its 10-year plan because costs and implementation schedules are dependant on the results of the Nevada study as well as agreement between California and Nevada on cost sharing.

PART II

FREIGHT RAIL ELEMENT

CHAPTER IX

INTRODUCTION

Railroads have moved freight in the Golden State for almost 150 years. From the 1850s to the present, they have served shippers of thousands of commodities in virtually all parts of the State, and have linked California with the rest of the nation. The purpose of this chapter is to provide a broad overview of freight rail operations and associated commerce, business, and institutional issues in California.

According to the American Association of Railroads (AAR), there are 32 freight railroads in California, operating 7,498 miles of track¹. The Union Pacific Railroad (UP) operates the largest portion of the rail lines with 3,579 miles of track or 48 percent of the total miles. The BNSF Railway (BNSF) operates 2,167 miles of track or 29 percent. The remaining 23 percent are operated by regional and short line railroads. More than 57 million tons of freight rail traffic originated in the State in 2001. Freight rail traffic that terminated in California was even higher, at over 92 million tons. These figures point to the State's role as a major user/producer of import and export rail-borne commodities that impact the rest of the United States. The *California State Rail Plan 2003-04 – 2013-14* (the State Rail Plan) points out the magnitude of California's industrial and consumer market dependence on the freight railroads. The State Rail Plan presents the status and importance of freight railroads in California as well as a discussion of the major issues facing the railroads in the State.

MAJOR FREIGHT RAILROADS

The two Class I railroads in California², UP and BNSF, move the majority of rail freight. These railroads have large networks that connect California with important rail hubs such as Chicago, Kansas City and New Orleans, as well as routes running the length of California, linking the Pacific Northwest with the Los Angeles area. Many of the routes in California are the products of railroad combinations or mergers, involving some of the most historic names in California rail history. The UP and BNSF rail systems in California can be seen on the following page in Figure 9A.

¹ *Railroads and States*, American Association of Railroads, 2002.

² There are three classes of railroads in the United States: Class I railroads having an annual operation revenue greater than \$258.5 million, Class II or regional railroads having an annual operating revenue between \$40 million and \$258.5 million, and Class III or local railroads commonly known as "short lines" having annual operating revenues of less than \$40 million.

Figure 9A

Class 1 Railroad System Map



UNION PACIFIC RAILROAD

UP is the largest railroad in the State, operating on 3,454 miles of track including trackage rights.³ In California, the UP system is made up primarily of three historic railroad properties:

- The historic UP, with a main line running between Las Vegas, Nevada and Southern California.
- The former Southern Pacific (SP), with main and branch lines that at one time reached virtually every corner of the State.
- The former Western Pacific (WP), with a main line running between northern Nevada and the San Francisco Bay Area.

Main line routes are part of the national rail systems. Comparatively high revenue ton-mile figures⁴ are generated on these segments, manifesting their importance to the UP system. Other UP lines include branch lines and secondary main lines, which feed traffic to the main lines and contribute relatively low revenue ton-miles.

Figure 9B presents tons of freight handled by UP in California. The largest amount of freight handled is in the southern part of the State. The least amount of freight handled is in the northeastern corner of the State. The majority of freight moves through the Central Valley rather than along the coast.

BNSF RAILWAY

BNSF is the second largest railroad in California. BNSF operates on 2,125 miles of track (including trackage rights) in the State.⁵ BNSF was created from the merger of the former Burlington Northern Railroad (BN) and the former Atchison, Topeka and Santa Fe Railway (ATSF) in 1995. The ATSF originally had a line that ran from the San Francisco Bay Area through the San Joaquin Valley and into Southern California. BN had a line running from the Oregon border to a junction with the former WP in Bieber in Northeastern California. As part of the 1996 UP/SP merger, BNSF was allowed to purchase the former WP line from Bieber to Keddie and obtain trackage rights to Stockton, thereby giving California shippers a competing north/south rail option. Figure 9C presents tons of freight handled by BNSF in California.

³ *Railroads and States*, American Association of Railroads (AAR), 2002.

⁴ One ton moved in revenue service one mile is one revenue ton-mile.

⁵ *Railroads and States*, American Association of Railroads (AAR), 2002.

Figure 9B

UP Railroad Freight Handled

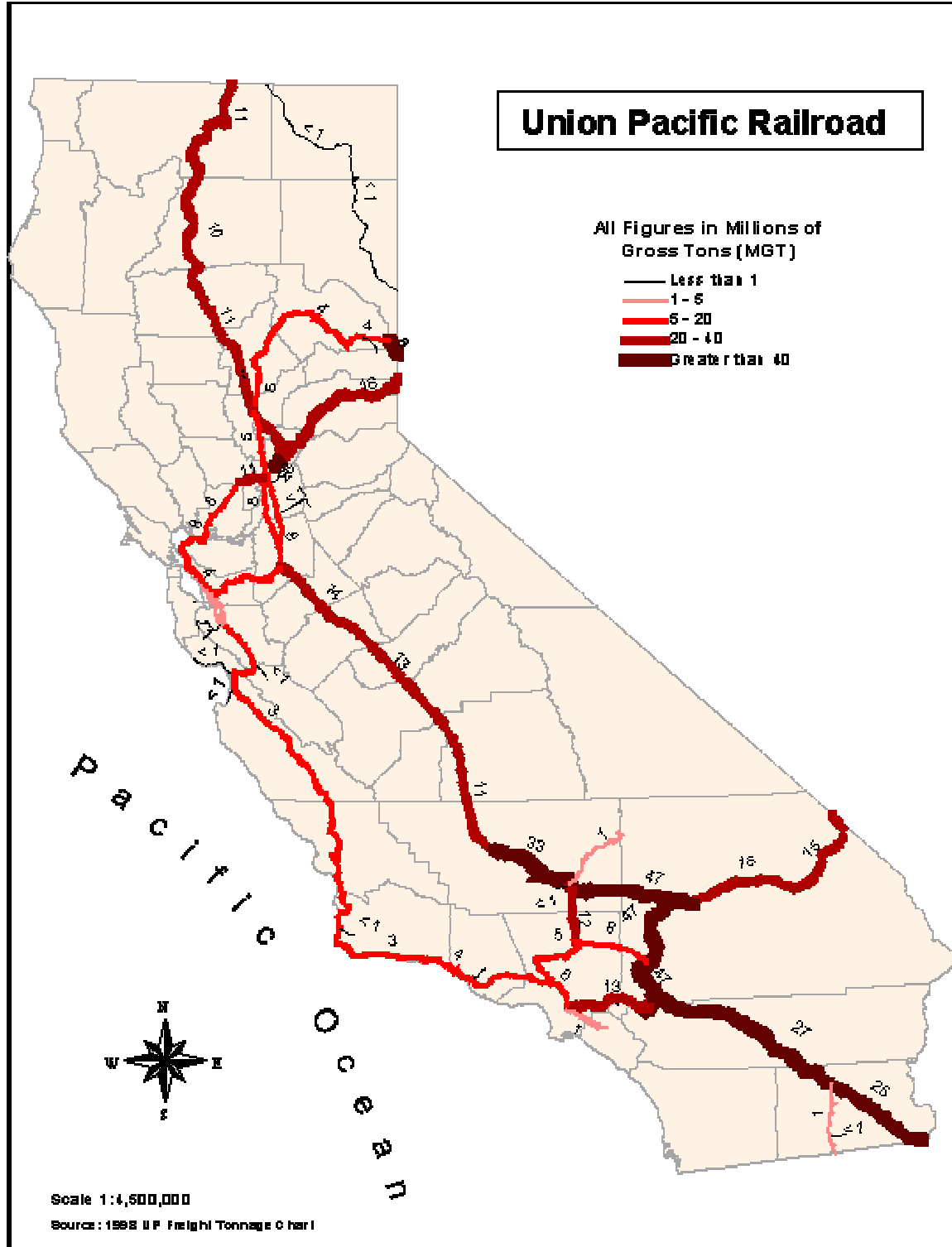
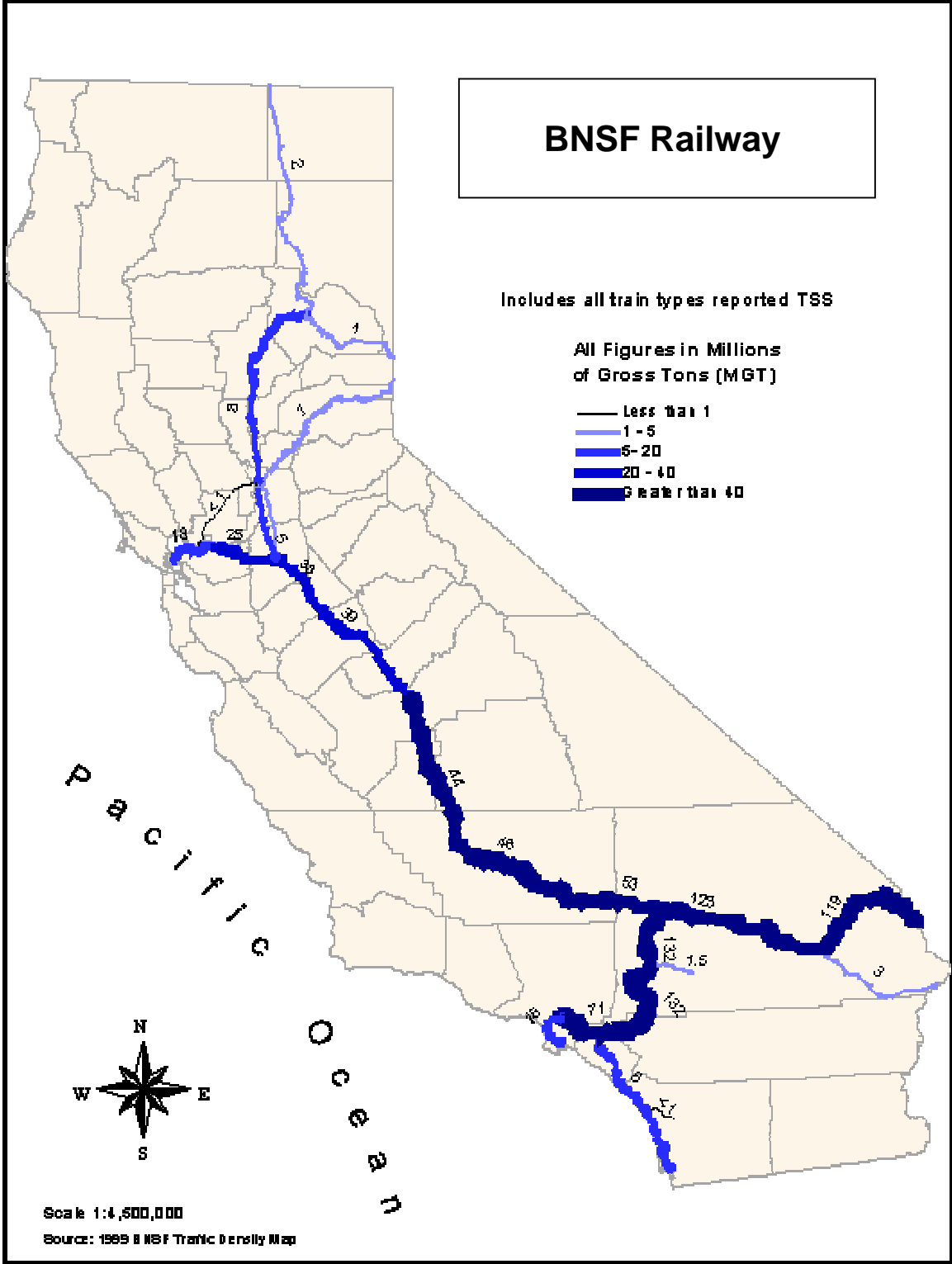


Figure 9C
BNSF Railway Freight Handled



REGIONAL RAILROADS

California has one Class II regional railroad operating in the State. The Central Oregon and Pacific (CORP), with its headquarters in Roseburg, Oregon, operates a 449-mile railroad between Eugene, Oregon and Black Butte near Weed, California. The CORP, which handles mostly forest products from Southern Oregon, provides freight service in California on 52 miles of track between Hilt and Black Butte.

SHORT LINE RAILROADS

There are 29 Class III short line railroads operating on 1,700 miles or 23 percent of California's rail mileage. During the 1980s and 1990s, many California short lines began operations as spin-offs of Class I branch and secondary main lines. Short line railroads in California provide switching services and/or interchange freight to the Class I carriers for transportation to other parts of the United States as well as to international markets. They play an important role in California's overall transportation system, especially for local communities not served by a Class I railroad.

Short line railroads are classified as either local carriers serving multiple shippers in one or more communities or switching and terminal carriers operating in one industrial area such as a port or industrial park. Some short line railroads are owned by the single shipper or corporation that they serve. For example, the only traffic carried by the Quincy Railroad in Plumas County is finished forest products for its owner, Sierra Pacific Industries. Other short lines include terminal railroads that perform switching for Class I railroads. Examples are the Pacific Harbor Line serving the Ports of Los Angeles and Long Beach, and the Oakland Terminal Railway serving the Port of Oakland.

In 2000, California short line railroads handled over 750,000 carloads of international freight. Many short lines serve industries along the I-5, I-10, I-40 and I-80 corridors. They provide switching services to the Ports of Los Angeles, Long Beach, Oakland, Hueneme, and Stockton. The majority of the analysis for short lines was provided by a survey of California's short line railroads.

The California short line railroads are listed in Figure 9D along with route miles and millions of gross ton-miles per mile (MGTM/M).⁶ These railroads are typically referred to as short, light density lines because most of them average less than 1 MGTM/M. The short line railroads that are currently in service are displayed in Figure 9E.

⁶ MGTM/M is the standard railroad metric of traffic density.

Figure 9D

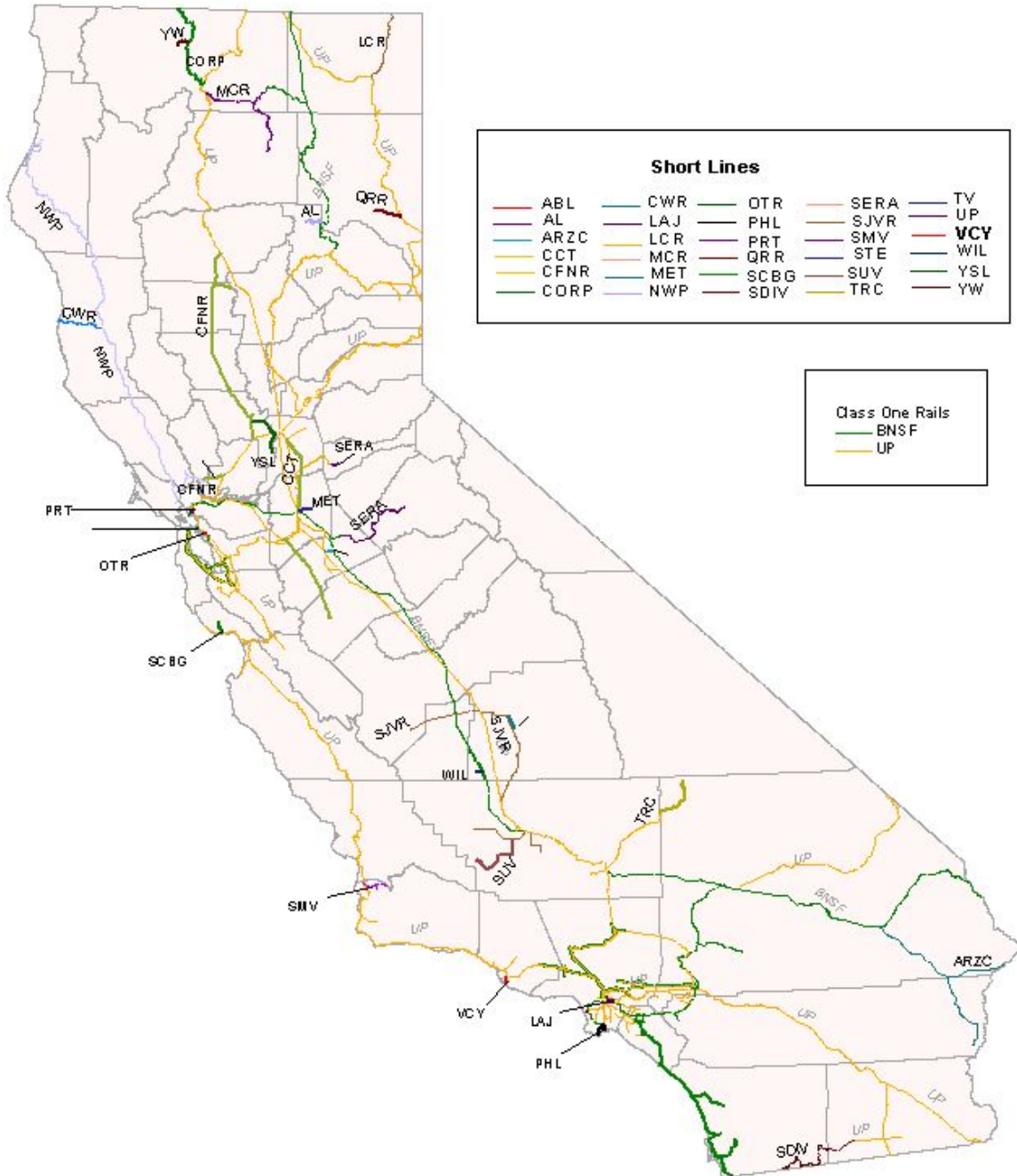
Regional Railroads and Short Lines in California⁷		
Railroad	Miles of Railroad in California	Million Gross Ton-Miles/Mile⁸
Almanor Railroad (AL)	13	0-0.99
Arizona & California Railroad (ARZC)	132	1-4.99
California Northern Railroad (CFNR)	250	0-0.99
Carrizo George Railway (CZRY)	2	0-0.99
Central Oregon & Pacific Railroad (CORP)	52	1-4.99
McCloud Railway Company (MCR)	128	0-0.99
Northwestern Pacific Railway (NWP)	316	0-0.99
San Diego & Imperial Valley RR (SDIV)	114	0-0.99
Santa Maria Valley Railroad (SMV)	18	0-0.99
Sierra Railroad (SERA)	54	0-0.99
Stockton Terminal & Eastern Railroad (STE)	17	0-0.99
Trona Railway (TRC)	31	1-4.99
Ventura County Railroad (VCRR)	13	0-0.99
West Isle Line (WI)	5	0-0.99
Yreka Western Railroad (YW)	9	0-0.99
Switching and Terminal Railroads		
Amador Foothill Railroad (AFR)	12	0-0.99
California Western Railroad (CWR)	40	0-0.99
Central California Traction (CCT)	68	0-0.99
Lake County Railroad (LCR)	41	0-0.99
Los Angeles Junction Railway (LAJ)	65	1-4.99
Modesto & Empire Traction (MET)	31	1-4.99
Napa Valley Railroad (NPRR)	21	0-0.99
Oakland Terminal Railway (OTR)	12	0-0.99
Pacific Harbor Line (PHL)	21	5-9.99
Parr Terminal Railway (PRT)	2	0-0.99
Quincy Railroad (QRR)	30	0-0.99
San Joaquin Valley Railroad (SJVR)	310	0-0.99
Santa Cruz, Big Trees & Pacific Rwy (SCBG)	10	0-0.99
Tulare Valley Railway (TV)	6	0-0.99
Yolo Short Line Railroad (YSLR)	38	0-0.99
TOTAL MILES	1813	

⁷ The short lines and their route miles were obtained from Railroads and States, American Association of Railroads, 2001.

⁸ Ton-mile figures from U.S. Railroad Traffic Atlas, by Harry Ladd, 1998.

Figure 9E

Regional and Short Line Railroad System Map



COMMODITIES SHIPPED

The primary commodities handled by rail in California include bulk shipments of chemicals, petroleum, food products, farm products, primary metals, paper products and lumber. These general carload commodities are less time sensitive than the high value cargo that tends to be shipped by truck and air. Overall, the general carload base business⁹ for railroads has remained strong. This has prompted UP to make substantial investments in improving throughput at classification yards such as the \$145 million upgrade of their Roseville Yard that opened in 1999. Increasingly, the railroads have been able to attract more time sensitive shipments using expedited rail intermodal service. This premium service allows trailers and containers the ability to move quickly on fast transcontinental routes with penalties assessed to the railroad if shipments are late. To capitalize on this growing demand, the Class I railroads have been building new intermodal yards. Among these are the UP's facility in Lathrop and the BNSF's facility in Stockton.

Figure 9F shows commodities originated and terminated in California for 2000. Mixed freight includes international containerized freight going through the Ports of Los Angeles, Long Beach, and Oakland, as well as domestic containers handled at both the UP and BNSF facilities statewide.

Figure 9F

Commodities Originated and Terminated in California for 2001

Tons Originated			Tons Terminated		
Commodity	Tons	%	Commodity	Tons	%
Mixed Freight	25,833,584	45%	Mixed Freight	20,152,436	22%
Food Products	6,470,296	11%	Farm Products	9,768,441	11%
Chemicals	3,595,925	6%	Food Products	9,350,300	10%
Primary Metal Products	3,275,706	6%	Chemicals	8,613,677	9%
Glass and Stone	2,856,792	5%	Primary Metal Products	6,596,546	7%
All Other	15,577,380	27%	All Other	38,202,631	41%
Total	57,609,683			92,684,031	

Source: Railroad Statistics by State, Association of American Railroads, 2002

⁹ General carloads include traffic in traditional railroad equipment such as gondolas, boxcars, hopper cars, tank cars, lumber cars, etc. By contrast, intermodal shipments, consisting of trailers and containers, travel on flat cars or "double stack" cars, where containers are placed one on top of another. Intermodal service tends to operate on tight schedules and have faster transit times compared to general carload business.

CHAPTER X

MAJOR FREIGHT ISSUES

GROWING BUSINESS AND CAPACITY CONCERNS

Class I railroads are facing increasing traffic levels system-wide. For 2003, UP revenues were up 3.4 percent to \$11.6 billion from 2002¹⁰. Similarly, BNSF revenues were up 4.6 percent to \$9.4 billion in the same period. As business grows, maintaining sufficient capacity to ensure reliable operations has become the single largest concern of Class I operators. This concern drives the freight railroads' major investment strategies.

A Caltrans survey in 2000 of the UP and BNSF Railroads indicated their major choke points are areas where they both operate on the same facility. Capacity improvements are needed at:

- Cajon Pass between San Bernardino and Cajon Summit
- Tehachapi Pass between Bakersfield and Tehachapi Summit
- Colton Crossing in San Bernardino

In addition, both railroads noted capacity improvements were needed between San Bernardino and Los Angeles along State Route 91, the Interstates 5 and 10 corridors to accommodate additional commuter rail service. The Alameda East Construction Authority, the San Bernardino Associated Governments, Riverside County Transportation Commission, Orange County Transportation Authority and the On-Trac Project are working with the railroads to address the need for grade separations to reduce delays at grade crossings between these two cities.

Capacity can be measured in terms of the level of investment across three elements: freight handling facilities or yards, main line track, and rolling stock. UP's capital investments for 2003 exceeded \$1.9 billion, which represents over 16 percent of revenues. In the same year, BNSF spent \$1.7 billion for capital investments, over 18 percent of revenues. While expensive, these investments are needed to move the freight on ever more crowded main lines and through ever more congested intermodal and general classification yards.

¹⁰ 2003 Financial statements from UP and BNSF investor reports

INTERMODAL SHIPMENTS

Intermodal is defined as being or involving the transportation by more than one mode during a single journey. For the purpose of this document, we are referring to the rail carriage of truck trailers and containers. The growing predominance of intermodal freight in California’s railroad operations is based on a large consumer demand as well as the fact that California is the primary gateway for containerized products coming in from the rapidly expanding Pacific Rim economies. Over time, intermodal has come to also include the transfer of marine containers between ocean-going ships and rail cars.

As the growth leader, intermodal traffic is making heavy demands on existing railroad capacity. BNSF’s international intermodal traffic has grown more than 60 percent over a five-year period to 1.5 million containers in 2000. International container shipments have been growing rapidly to and from West Coast ports over the last 10-year period, as can be seen from Exhibit 10A.

Figure 10A

**Container 20 Foot Equivalent Units (TEUs)
Major Ports of the Continental U.S.¹¹
(In Millions)**

Port	1994	2003	Change
Los Angeles	2.52	7.18	185%
Long Beach	2.57	4.67	82%
Tacoma	1.03	1.74	69%
Oakland	1.49	1.92	29%
Seattle	1.41	1.49	6%

California ports handle the majority of the West Coast marine container traffic. Together, the Ports of Los Angeles and Long Beach make up the third largest container port facility in the world. Fifty percent of all the containers handled at the Ports of Los Angeles and Long Beach go to U.S. destinations by rail. The vast majority of these are bound for inland destination points such as Chicago and Kansas City, illustrating the importance of the rail/steamship interface.

In order to facilitate further growth, the ports and railroads have been making substantial investments to improve rail/ship interface. Recent planned improvements include:

¹¹ American Association of Port Authorities, 2003

- On-dock facilities¹² in both the ports of Los Angeles and Long Beach.
- The Alameda Corridor East project between downtown Los Angeles and San Bernardino and Riverside Counties.
- The Joint Intermodal Terminal at the Port of Oakland.

SHARED USE OF RIGHTS-OF-WAY

In many areas of the State, passenger services share rail rights-of-way with freight railroads. For both passenger and freight railroads sharing a right-of-way, a primary issue is the capacity of the route to accommodate all train movements. Before a freight railroad grants a passenger operator use of its facilities, the railroad will require various capacity improvements to ensure the reliability of both freight and passenger services. The cost of these improvements may be borne by the passenger operator or can be shared.

Freight railroads and various public agencies have entered into negotiations for the use of freight rail lines for commuter and intercity passenger services. Some of the freight railroads sold their lines to the passenger operators but retained the rights to provide freight services on them. In California shared use of rights-of-way include:

- State-sponsored Amtrak intercity services: Pacific Surfliner Route, San Joaquin Route and Capitol Corridor.
- The Southern California Metrolink commuter rail system.
- The San Diego County Coaster commuter rail system.
- The Caltrain commuter rail system in the San Francisco Bay Area.
- The Altamont Commuter Express (ACE) rail system.

In recent years, ridership and train service has increased on all commuter and intercity rail lines in California. Passenger operators have plans for adding more trains over the next several years. In some cases, capacity has proven insufficient to handle existing levels of both freight and passenger service, particularly in metropolitan areas with substantial freight and passenger traffic. For example, in 2000, Metrolink trains operated on time 95 percent of the time on Metrolink controlled trackage. On tracks owned by UP and BNSF, Metrolink trains operate on time 70 to 85 percent on time. When the trains ran late, the cause of the delay was attributed to BNSF freight trains 37 percent of the time, UP freight trains 25 percent of the time, other Metrolink trains 4 percent of the time and Amtrak trains 2 percent of the time.

¹² An on-dock rail facility refers to track and loading equipment inside a marine terminal to enable the movements of containers between ships and trains without leaving the marine terminals.

Freight interference causes major operating problems for Metrolink especially on UP's Los Angeles Subdivision between Riverside and Los Angeles. Heavy UP port rail traffic results in Metrolink trains operating late almost on a daily basis. Heavy BNSF port rail traffic on their San Bernardino Subdivision between Los Angeles and San Bernardino also causes delays for Metrolink trains.

JOINT DISPATCHING OF FREIGHT OPERATIONS

In California, five Class I rail segments have joint freight train operations. Three segments in California are owned and dispatched by the UP. These are:

- The UP Sacramento and Canyon Subdivisions between Stockton and the Nevada State Line via the Feather River Canyon.
- The UP Martinez and Roseville Subdivisions between Oakland and the Nevada State Line via Donner Summit.
- The UP Mojave Subdivision between Bakersfield and Mojave.

Two segments are owned and dispatched by the BNSF. They are:

- The Mojave Subdivision between Mojave and Barstow.
- The Cajon and Needles Subdivisions between San Bernardino and Daggett.

In some cases, the railroads share each other's facilities to take advantage of more direct routes. Such arrangements also allow track maintenance costs to be shared as they are based on the number of each railroad's trains using the facility. However, the tenant railroad can be subject to delays caused by the railroad that owns the infrastructure because the owner's trains will typically be given priority.

The problems of joint train operations are compounded when steep mountainous grades and curves force trains to operate at reduced speeds. For trains running over Tehachapi Pass, the operations are especially time consuming due to the fact that it is a single track railroad with many sharp curves and the steepest grade in the State.

This grade requires trains to operate additional locomotive units on trains traveling over the pass. There are a number of passing sidings but a minimum of 20 minutes delay to the train being passed is not uncommon. The 28 to 30 trains per day crossing over the Tehachapi Pass cause a major bottleneck in the rail connection to California's Central Valley. To double track the Tehachapi Pass route several new tunnels and bridges would have to be constructed at great cost.

Both UP and BNSF have established a joint dispatching center in San Bernardino so that both railroads can be in direct contact with each other to help make these joint train operations work as smoothly as possible.

FRESNO RAIL CONSOLIDATION

Currently, both UP and BNSF operate freight service through the City of Fresno. There is considerable public support by civic and political groups to consolidate both rail lines onto the UP rail corridor to the west of downtown Fresno. Many important issues need to be analyzed and solved including how to service existing freight customers, operational and dispatching questions and optimal track structure required to accommodate the increased traffic demand. A study by the Fresno Council of Governments determined that consolidation of the two lines is technically and operationally feasible but at a very high cost.

SHORT LINE RAILROAD ISSUES

SECURING INFRASTRUCTURE FUNDING SOURCE

Securing adequate funding for infrastructure upgrades and other capital investments is the most pressing issue for independently owned and operated short lines. Some short line railroads were spin-offs from the Class Is, and were already suffering from years of deferred maintenance when created. Maintenance-of-way procedures on these railroads typically are highly labor intensive and expensive. Because short line railroads operate on low profit margins they are unable to take on major infrastructure improvement projects.

TREND TOWARDS HEAVIER CARS

A major trend in the railroad industry is the use of heavier rail cars as a means of maximizing load potential, thereby generating cost savings. The upper limit of these new car weights has been increased to 286,000 pounds. To handle these heavier cars, short lines must have track, roadbed and bridges capable of handling the increased loads. This means a substantial investment that many short lines cannot afford given the limited revenues that they earn moving cars between shippers and the Class I railroads.

Without the necessary infrastructure, many of the commodities moving by rail today have to be hauled by trucks to and from transload facilities located at major railroads. This shift from short line rail to trucks will further congest the State's highway system, create more traffic delays, and increase air pollution and highway maintenance costs. The loss of revenue to short line railroads could force some to go out of business leaving California businesses without rail services. The additional truck transportation costs will have to be passed on to consumers, making goods more costly to purchase.

SHORT LINE BILL OF RIGHTS

The continuing consolidation of Class I railroads is a concern for short line railroad operators. In 1975, there were 22 Class I railroads operating in the U.S. Presently, there are eight. Since 1995, the number of Class Is operating in California has decreased by half, from four to two.

The American Short Line and Regional Railroad Association (ASLRRA) is a national non-profit trade association representing the interests of over 400 member short lines and regional railroads. In order to protect the viability of short lines, ASLRRA expressed to the U.S. Surface Transportation Board its opinion that a “Short Line Bill of Rights” should be made a condition for the approval of all future Class I railroad mergers¹³ and consolidation transactions. The ASLRRA, has proposed four rights as follows:

1. Small railroads have the right to compensation for Class I service failures.
2. Short line and regional railroads have a right to interchange and routing freedom.
3. Short line and regional railroads have the right to competitive and nondiscriminatory pricing.
4. Short line and regional railroads have a right to fair and nondiscriminatory car supply.

MAJOR ISSUES FOR CALIFORNIA RAIL SHIPPERS

A study entitled the *Western Transportation Trade Network (WTTN)* surveyed 53 shippers in 13 western states for their perspectives on Class I railroad performance.¹⁴ The Department participated in the study, which was conducted during 1998 and early 1999. Two issues of primary concern to the shippers were (1) reliable transit times and (2) car availability and condition. Interestingly, the cost of rail service and effective customer service were of substantially less interest to shippers than those two issues.

Given the importance of intermodal traffic to railroads in California, the focus of this effort was on intermodal shippers. One company studied was a California intermodal marketing company (IMC)¹⁵, which leases trailers and containers from both railroads and “stack train operators” and solicits loads for this equipment

¹³ STB ExParte No. 582, Public Views on Major Rail Consolidations, Statement of Frank K. Turner, President, ASLRRA.

¹⁴ Western Transportation Trade Network Study, Western Association of State Highway and Transportation Officials, August 1999.

¹⁵ As noted above, an IMC leases containers and trailers from railroads like BNSF and UP, and in turn solicits loads for these containers from shippers. It then arranges for the pick-up of the trailers and containers from the shippers, their transport on the railroad, and their deliveries to receivers. For these logistical arrangements, the IMC charges its fees to shippers.

from shippers for transport in rail intermodal service to points throughout North America. The other was a container train operator who owns containers and pays the railroads to deliver their containers to points throughout North America. Of particular concern to both of these parties were the following issues:

- Congested intermodal terminals that delay shipments.
- Lack of trailers, containers, and rolling stock to handle traffic in and out of Southern California.
- Congestion on main lines and in terminals of eastern railroads that delays shipments to and from California.
- Information technology problems causing lost rail cars.
- Delays to rail shipments related to increasing shared use of main lines by commuter and intercity passenger operations.
- Grade crossing accidents.

CHAPTER XI

SHORT LINE ANALYSIS

Short line railroads play an important role in moving goods to and from California regions and local communities. The commodities moved tend to have a low transportation cost to weight/volume ratio, which contributes to their attraction to short lines, instead of trucks.

There are 30 short line and regional railroads in California today. Most of them are privately owned and employ between ten and 50 employees, as shown by the summary from the American Association of Railroads in Figure 11A on the following page. Revenues for the majority of the short lines are less than \$5 million annually.

None of the short lines have revenues exceeding \$40 million per year. Operating costs were not cited. However, in California, operating costs range from about 75 percent to 110 percent of revenues.¹⁶ The latter figure would suggest that short lines with operating costs higher than revenue have other income sources such as income from rental property.

A detailed survey sent to all California short lines in 2000 provided much of the basis for analysis. The summary that follows is focused on California and the 19 short line railroads that responded. Topics covered relate to the economic future of the short lines, service and infrastructure, commodities carried, and upgrade costs.

¹⁶ Per conversation with Mr. Andrew Fox, CSLRRA president, August 2, 2000.

Figure 11A

Regional and Short Line Railroad Ownership and Size

	Railroad	RR Type	Owner	Employees	Annual Revenues (millions)
1	Almanor Railroad Co.	Local	Shipper	4	<\$5
2	Amador Foothill Railroad	S&T	Shipper	3	<\$5
3	Arizona & California Railroad*	Local	Private	34	\$10-\$20
4	California Northern Railroad	Local	Private	46	\$10-\$20
5	California Western Railroad, Inc.	S&T	Private	5	<\$5
6	Central California Traction Co.	S&T	Class I	23	<\$5
7	Central Oregon & Pacific*	Regional	Private	130	\$20-\$40
8	Carrizo Gorge Railway Inc	Local	Private	2	<\$5
9	Lake County Railroad*	S&T	Public	2	<\$5
10	Los Angeles Junction Railway	S&T	Class I	48	\$5-\$10
11	McCloud Railway Co.	Local	Private	23	<\$5
12	Modesto & Empire Traction Co.	S&T	Private	65	\$10-\$20
13	Napa Valley Railroad Co.	S&T	Private	20	<\$5
14	Northwestern Pacific Railroad	Local	Public	3	<\$5
15	Oakland Terminal Railway	S&T	Class I	12	<\$5
16	Pacific Harbor Line, Inc.	S&T	Private	45	<\$5
17	Parr Terminal Railroad	S&T	Private	12	<\$5
18	Quincy Railroad	S&T	Shipper	2	<\$5
19	San Diego & Imperial Valley	Local	Public	15	<\$5
20	San Joaquin Valley Railroad Co.	Local	Private	79	\$5-\$10
21	Santa Cruz, Big Trees & Pacific	S&T	Private	5	<\$5
22	Santa Maria Valley Railroad	Local	Private	12	<\$5
23	Sierra Railroad	Local	Private	13	<\$5
24	Stockton Terminal & Eastern	Local	Private	14	<\$5
25	Trona Railway	Local	Shipper	29	\$5-\$10
26	Tulare Valley Railroad Co.	S&T	Private	2	<\$5
27	Ventura County Railroad	Local	Private	5	<\$5
28	West Isle Line, Inc.	S&T	Private	2	<\$5
29	Yolo Short Line Railroad Co.	Local	Private	8	<\$5
30	Yreka Western Railroad	Local	Private	3	<\$5
	Total				

* – Data for entire line, not only California
S&T – Switching and terminal carriers

SURVEY RESULTS

In 2000, the Department surveyed 29 short line carriers and received a total of 19 responses (66 percent of the 29 companies). The survey inquired about service and infrastructure characteristics, commodity movements, and issue areas. The following summarizes responses received for the key issue areas:

Track and Right of Way

- Track and right of way (ROW) improvements are needed to accommodate 286,000-pound cars.
- The increase in operating weight will place a further maintenance expense burden on the short lines.

Safety

- Improve at-grade crossing protection devices.
- Additional funding for grade separations is needed.
- Replace outdated signal systems.

Intermodal Facilities

- Seven of the respondents operate some type of intermodal facility.
- Of these, four identified the need for upgrades and improvements totaling approximately \$19 million.

State Role

- Because of thin short line operating margins (revenues less operating costs), the short lines request State assistance in capital funding.
- Assume responsibility for flood protection due to State actions diverting or increasing flood flows.
- Take an active role to preserve existing corridors for future passenger and freight services.

Local Jurisdictions

- Local government should consider the provision of rail access in approval of new commercial and industrial properties.

SERVICE AND INFRASTRUCTURE

The longest short line railroad is the San Joaquin Valley Railroad with 310 miles of track. The Parr Terminal Railway has the shortest line with just two track miles. The California Western has, by far, the highest number of bridges of any reporting short line in the State. The California Northern Railroad Company in

1999 transported the most freight with 34,637 cars, closely followed by San Joaquin Valley with 30,231 cars, Pacific Harbor Line with 24,195 cars, and Modesto & Empire Traction with 23,294 cars. These four lines alone accounted for 75 percent of all reported short line movements.

Seven short line railroads reported having intermodal facilities, defined as: Container on Flat Car (COFC), Trailer on Flat Car (TOFC), team tracks, or bulk transfer facilities. Of the 19 short lines in the survey sample, 12 reported not owning or operating any intermodal facility.

COMMODITY MOVEMENTS

In 2001, the AAR¹⁷ reported 5.4 million carloads of freight originating and terminating in California, accounting for the movement of over 144 million tons of commerce.

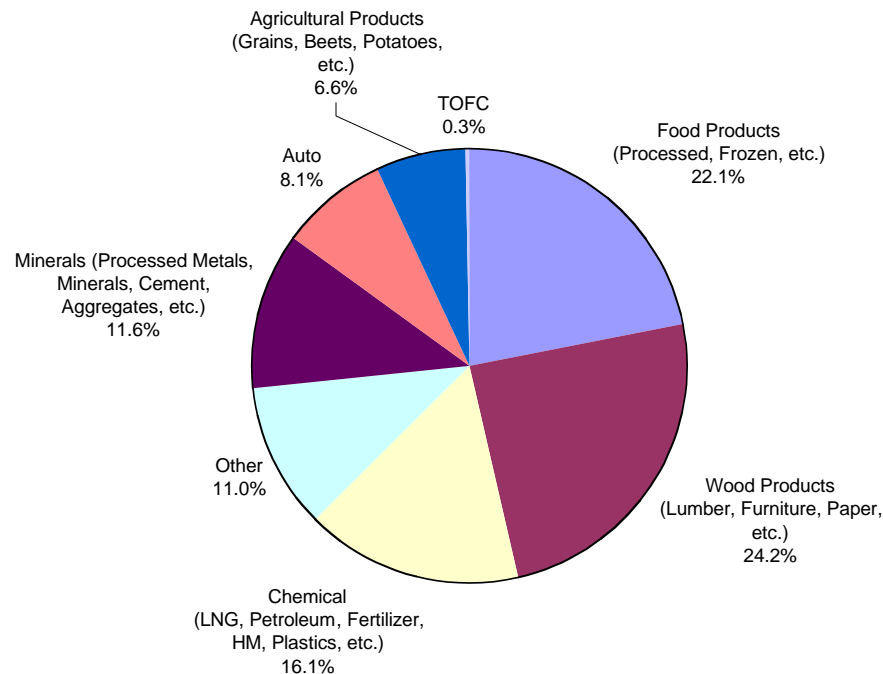
The reporting short lines handle over three percent of the number of annual cars and nearly eight percent of the total tonnage. The majority of all movements were interstate in nature. Many of them were bridge movements originating and terminating in other Pacific Rim countries and moving through California to and from other U.S. inland or East/Gulf Coast points.

The reported commodity shipments via the short lines can be aggregated into seven commodity categories:

- Agricultural Products – grains, beets, potatoes, etc.
- Automobiles.
- Chemical – petroleum products, liquefied natural gas (LNG), fertilizer, hazardous materials, etc.
- Food Products – processed foods, tomato paste, frozen foods, etc.
- Minerals – processed metals, minerals, cement, gypsum, aggregates, etc.
- TOFC or COFC mixed freight shipments.
- Wood Products – lumber, logs, paper, furniture, etc.

The number of carloads by commodity was used to estimate the statewide short line commodity mix. The results are shown in the pie chart labeled Figure 11B. Wood and food products each accounted for over 20 percent of the movements.

¹⁷ American Association of Railroads, *2001 Traffic Report for California*.

*Figure 11B***California Short Line Railroad Commodity Distribution****UPGRADE COSTS**

Significant debate surrounds the magnitude of costs required to upgrade short line infrastructure to keep the railroads competitive and in business. Most lines identified the cost of upgrading the current infrastructure as a major impediment to the success of future operations. A number of the lines submitted specific estimates for upgrading and improving track, ROW, and intermodal facilities. These reported costs amount to over \$110 million for track and ROW and \$19 million for intermodal facilities.

The project team estimated upgrade costs for all California short lines using a methodology developed specifically to handle 286,000-pound cars¹⁸. This methodology provides unit costs for each track element based on national data.

Since the upgrade cost is primarily mileage driven, the longest short lines, such as the San Joaquin Valley Railroad and the California Northern Railroad Company, exhibit the highest upgrade estimates (\$31.7 million and \$22.6 million, respectively). The total statewide short line upgrade cost is on the order of \$190 million.

¹⁸ An Estimation of the Investment in Track and Structures Needed to Handle 286,00 lb. Rail Cars, *American Short Line and Regional Association*, May 2000.

To arrive at a grand total improvement cost estimate, other infrastructure projects need to be added in, as well as intermodal facility projects. Doing so would bring the total estimated upgrade and improvement cost for short lines statewide to allow handling of 286,000-pound cars well in excess of \$200 million. With operating ratios (the percent of revenues consumed by operating costs) of 75 percent or more, California short lines would seem hard pressed to cover capital costs for handling 286,000-pound cars, plus all other ongoing capital needs.

POTENTIAL SHORT LINE CLOSURE EFFECTS

An analysis of total rail carloads was conducted to determine what effects there would be on highway mobility if the short lines were to go out of business. In addition, potential highway maintenance impacts were analyzed.

For the majority of short lines, the Average Annual Daily Traffic (AADT) on adjacent highways was less than 20,000. Only four were greater than 40,000, with Pacific Harbor having the highest expected AADT of 203,000.

Short line closures would result in less than a one percent increase in AADT for a majority of the short lines responding. Closures of only two would result in a greater than 5 percent increase in traffic, while closure of the Arizona and California Railroad Company would result in an 11 percent increase.

VOLUME TO CAPACITY ANALYSIS

The projected increase in vehicular traffic is not sufficient without knowledge of existing conditions on the highway network. The volume to capacity (v/c)¹⁹ ratio was determined along each analyzed highway segment using the 1997 Department Route Segment Report. A v/c ratio of 1.0 indicates that the highway segments do not have any additional capacity.

Using the Department's Transportation Concept Reports, it was determined that little congestion exists along routes parallel to 14 of the 19 responding railroads, where v/c ratios are below 0.6. Figure 11C shows that v/c ratios for routes parallel to the remaining five vary between 0.62 and 1.00. Considering the additional traffic that would result from short line closures, only the Modesto & Empire Traction Company's closure would cause any strain on capacity, likely increasing traffic by 3.55 percent. The other closure of the other four short lines would cause a less than two percent increase in traffic.

¹⁹ Volume represents the number of vehicles per hour that presently travel the highway as represented by the present design hour volume (PDH). Capacity represents the maximum number of vehicles per hour the highway can carry as indicated in the Highway Capacity Manual. *1997 Route Segment Report, State of California Department of Transportation.*

*Figure 11C***Existing Volume to Capacity Ratio**

Short Line Survey Respondents	Nearest Competing Highway	Additional Traffic (% Automobile)	Existing V/C
Pacific Harbor	I-710, I-405	0.28%	1.00
Modesto & Empire Traction Company	SR-132	3.55%	0.78
Central California Traction Company	SR-99	0.03%	0.78
Stockton Terminal & Eastern	SR-4	0.21%	0.69
Sierra Railroad Company	SR-120, SR-108	1.82%	0.62

IMPACT ON MAINTENANCE

Any increase in traffic has an impact on highway maintenance costs. Traffic diverted from railroads to trucks increases highway volumes, reduces roadway life expectancy, and requires additional highway maintenance (e.g., resurfacing). Unscheduled costs may result in postponement of other projects or the need for additional funding.

The Federal Highway Administration has determined that the marginal pavement cost of an 80,000-pound five-axle combination truck on a rural interstate highway is approximately 13 cents per mile as of 1997.²⁰ Factoring the FHWA rate and the total 1999 projected truckload equivalents for each short line's route²¹, an annual California highway deterioration rate was determined.

If the California short line railroads were to cease operations, the mode shift of railcars to truckloads would cost the State over \$9 million in highway deterioration costs. Combined, the San Joaquin Valley Railroad and California Northern Railroad Company represent 83 percent of this total statewide figure.

In addition to the highway deterioration costs from the increase in truck traffic throughout the State, other social costs could increase (e.g., safety, noise, air pollution).

²⁰ Highway Cost Allocation Study, *FHWA 1997*.

²¹ The length of each short line was used as a proxy for competing highway length.

CHAPTER XII

FUNDING

ECONOMIC ROLE OF SHORT LINE AND REGIONAL RAILROADS

There are about 500 short lines and regional railroads in North America. Though their individual roles may vary, they typically feed traffic to the high volume, main-line rail routes owned by the Class Is.

The total number of short lines and regional railroads has been growing. In 1980, there were about 220 companies. Driving this growth has been the rationalization efforts of Class I railroads, spinning off numerous light density branch lines²² in an effort to control costs. The Class Is either sold many lines outright or leased components of their operations to private operators.²³

The short line railroads, with 1,813 miles (24 percent) of the State's rail mileage, are facing significant problems. Many California short line railroads serve industries along the I-5, I-10, I-40 and I-80 corridors and near the Ports of Los Angeles, Long Beach, Oakland, Hueneme, Stockton and Sacramento. These railroads handle over 750,000 annual carloads of international freight. Their primary concern is their inability to handle the new industry standard 286,000-pound rail cars on lightweight track and bridge infrastructure. Short line railroad infrastructure that provides congestion relief along the major global gateways needs to be upgraded to accommodate the 286,000-pound rail cars that carry international freight.

SUSTAINABILITY OF SHORT LINES AND REGIONAL RAILROADS

Like Class I railroads, each short line and regional railroad is paid for moving cars on their railroad. In cases where short lines interchange cars with Class I railroads, these carriers share their revenue with the short lines. For a sustainable operation, short line revenues must be sufficient to cover both operating costs and capital costs. Operating costs include labor and fuel, among other things. Capital costs include improvements to rolling stock (i.e., vehicles) and track and bridges, among other things. Often revenues have proven inadequate to cover both operating and capital costs of short lines, and public funding sources have been needed to sustain the lines.

Exacerbating this issue is the "286 problem." The term refers to the 286,000-pound total weight of a loaded railcar. According to ASLRRRA,

²² The term "light density lines" is applied generally to branch line that generates significantly less rail traffic compared to the main line or a heavily used branch line.

²³ Class I route miles declined from more than 200,000 in 1970 to less than 120,000 in 1995. Over the same period, route mileage of Class II and III railroads increased from less than 15,000 to over 45,000 in 1995.

286,000-pound equipment is rapidly becoming the norm for commodities that are the bread-and-butter for many small railroads – grain, lumber and paper products. This heavier equipment puts significant strains on track infrastructure. Many short lines today cannot handle 286,000-pound cars. To do so would require heavier weight rail,²⁴ and upgrading costs are significant, as described earlier.²⁵ For short lines with thin operating margins (where revenues barely cover operating costs), upgrades are cost prohibitive.

According to the ASLRRRA, these short lines must quickly find funds for massive capital spending to upgrade track and bridges to handle larger, heavier freight cars that shippers and larger railroads are bringing on line in record numbers. The American Association of State Highway and Transportation Officials (AASHTO) estimated that total 10-year infrastructure needs for American short lines and regional railroads total between \$7.9 and \$11.8 billion, of which only 19 to 23 percent can be funded by the railroads themselves.²⁶ Beyond internal company sources and private sector financing, sources have included programs put in place by the federal government and numerous state governments.

The California Short Line Railroad Association (CSLRRRA) asserts that government support of many short lines is a necessity if these lines are to fulfill their economic role.²⁷ This fact is recognized by the federal government as well as by 30 other states, which have funding programs for short line railroads.

FUNDING SOURCES FOR SHORT LINES

FEDERAL RAIL PROGRAMS

Local Rail Freight Assistance

The federal rail service assistance program was established by the Federal Railroad Revitalization and Regulatory Reform Act of 1976 (4R Act), and was amended by the Local Rail Service Assistance (LRSA) Act of 1978, and the Omnibus Budget Reconciliation Act of 1981. The LRSA program provided funding on a federal/local matching share basis for four types of projects:

²⁴ Upgrades for 286-pound cars would call for rail in excess of 100 pounds; 112-pound rail would be typical of an upgrade.

²⁵ In its 1998 286,000# Upgrading Study Report, the Iowa Department of Transportation estimated the cost of upgrading a typical branch line to a level capable of handling 286,000-pound cars totaled \$170,000 per mile. This figure did not include any costs for bridges.

²⁶ The Ten-Year Needs of Short Line and Regional Railroads, AASHTO Standing Committee on Rail Transportation, December 1999. This effort surveyed short line and regional railroads regarding their capital needs. The responses indicated that the railroads have needs totaling about \$92,000 per mile for track, excluding signal and bridge improvements. This figure is significantly less than the \$170,000 per mile estimated by the Iowa Department of Transportation as the cost of upgrading a branch line to handle 286,000 pound cars and the \$137,000 per mile estimated by ASLRRRA. At least in part, the difference appears to lie in the fact that not all railroads responding to the AASHTO survey reported a need to upgrade track for 286,000-pound cars. The AASHTO needs calculation also included \$1.7 billion for equipment, including cars and locomotives.

²⁷ Per conversations with Mr. David Parkinson, former president, CSLRRRA, April 4, 2000.

rehabilitation, new construction, substitute service, and acquisition. The LRSA program permitted states to provide funds on a grant or loan basis. Over \$544 million in federal funds were expended between 1976 and 1985.

In 1990, the Local Rail Service Reauthorization Act was passed, and the name of the program was changed to Local Rail Freight Assistance (LRFA). The criteria for lines eligible to receive assistance also were revised. Funds for the program were dramatically reduced in the 1990s, and congressional appropriations ceased in 1995.

TEA-21 Rail Funding

In 1998, the Transportation Equity Act for the 21st Century (TEA-21) reauthorized the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA). TEA-21 contained several provisions for rail assistance project funding. Two of these, Section 7202, Light Density Line Pilot Programs, which is intended to replace LRFA, and Section 7203, Rail Rehabilitation and Improvement Financing (RRIF), are specifically designated for freight railroad infrastructure projects. Congress extended TEA-21 for five months beyond its original expiration date of October 1, 2003. Future Federal funding programs for rail freight service will depend upon the details of the next long term reauthorization of TEA-21 enacted by Congress.

TEA-21 rail initiatives are concentrated in six sections:

§ 7202: Light Density Line Pilot Program – The purpose of this section is to fund capital improvements and rehabilitation for publicly and privately owned light density lines. An annual total of \$17.5 million was authorized for the life of TEA-21, but funds were not appropriated.

§ 7203: Rail Rehabilitation and Improvement Financing (RRIF) – This section provides loans/loan guarantees for acquisition, development, improvement, or rehabilitation of intermodal²⁸ or rail equipment or facilities. It permits an aggregate unpaid balance of \$3.5 billion over the life of TEA-21 with \$1 billion to be designated for non-Class I carriers.

§ 1110: Congestion Mitigation and Air Quality Improvement Program (CMAQ) – This section continues the eligibility of rail projects and expands eligibility to air quality maintenance and non-attainment areas. Total available funding is \$8.1 billion over a 6-year period (1998-2003), with annual authorization amounts increasing each year during this period.

The primary purpose of the CMAQ program is to fund transportation projects and programs in non-attainment and maintenance areas that reduce transportation-related emissions. CMAQ funding was used by Riverside County to assist the

²⁸ Intermodal in this sense refers to the movement of freight traffic between modes. For example, an intermodal rail movement would include movement of a truck trailer or marine container on a railroad flatcar.

Arizona and California Railroad (ARZC) in constructing an intermodal facility in the City of Blythe.

§ 1119: Coordinated Border Infrastructure and Safety Program – The purpose of this program is to improve the safe movement of people and goods in the vicinity of our borders with Canada and Mexico. Funding of \$700 million is to be coordinated with the National Corridor Planning and Development Program. Improvements to existing infrastructure and operations that facilitate international trade are eligible for funding.

§ 1221: Transportation and Community and System Preservation Pilot Program (TCSP) – Allocations of \$25 million annually are available for initiatives regarding relationships between transportation, community and system preservation, and private-sector initiatives. States, local governments, and metropolitan planning organizations (MPOs) are eligible for discretionary grants to:

- Plan and implement strategies improving transportation efficiency.
- Reduce environmental impacts.
- Reduce future infrastructure investments.
- Ensure efficiencies in access to jobs and centers of trade.
- Examine related private-sector development and investment patterns that support these goals.

Funding from this section has been used by the State of Washington to acquire abandoned rail lines for service resumption purposes.

§ 1108: Highway Rail Grade Crossing Program – Under this section, the §130 Program of the Federal Highway Act is continued. It increased the Surface Transportation Program (STP) Safety Set Aside (\$466 million) with the §152 Hazard Elimination Program. The minimum funding in each state is tied to FY 1991 levels. However, all of the STP set aside is eligible at the state's option.

A number of states, working through their Congressional delegations, secured specific freight rail assistance projects under ISTEA. Examples include the repair of the Coos Bay Bridge (\$5.5 million) of the Central Oregon and Pacific, and construction of the San Ysidro Intermodal Yard (\$10 million) on the San Diego and Imperial Valley Railroad (operator of the San Diego and Arizona Eastern Railroad).

TIFIA Funding

The Transportation Infrastructure Finance and Innovation Act of 1998 (TIFIA) provides loans for improvements to freight facilities on or adjacent to the National Highway System (NHS); theoretically, freight rail facilities on or near the NHS may therefore be eligible for funding. This TEA-21 program provides assistance in the form of credit (direct loans, loan guarantees and standby lines of credit) for major transportation projects of critical or national significance. The project must cost at least \$100 million or be worth 50 percent of the state's annual apportionment of federal aid funds, whichever is less.

Tax Credits for Maintenance of Railroad Track

Section 245 of the "American Jobs Creation Act of 2004" (Public Law 108-357) provides a tax credit for 50 percent of railroad track maintenance costs for Class II and III railroads. (Class II railroads are medium sized, and Class III railroads are commonly considered short lines.)

STATE PROGRAMS

Most of the states participated in the federal program in the 1970s and 1980s when it was well funded, although many states, mostly outside of the Northeast and Midwest, were slow to get involved. At that time, most light density lines were owned by the Class I railroads. The principal issue was branch line abandonment as the larger carriers sought to rationalize their systems in an attempt to address their financial problems. Abandonment cases were common and were fought on both the planning (with assistance funding) and regulatory fronts.

Today, the problem is assisting short line operators. As a result of the spin-off process that was made possible by railroad deregulation, short line operators have inherited the vast majority of the remaining Class I branch lines. Many short line operators manage to continue service in cases where the Class Is would have filed for abandonment.

State Survey

Based on a survey of the states conducted by the AASHTO Standing Committee on Rail Transportation (SCORT), published in early 1997,²⁹ just over \$2 billion was expended on rail assistance projects between 1976 and 1995. The funding was distributed as shown in Figure 12A. Of the total of \$2.1 billion, it should be noted that only 28 percent was derived from federal funds, while 48 percent came from state sources. Matching funds from local and other sources accounted for almost as much (25 percent) as federal sources. The federal program thus served the purpose of providing inducement and seed money for a national effort. The \$2.1 billion funded 3,173 projects. There are 30 states outside California that

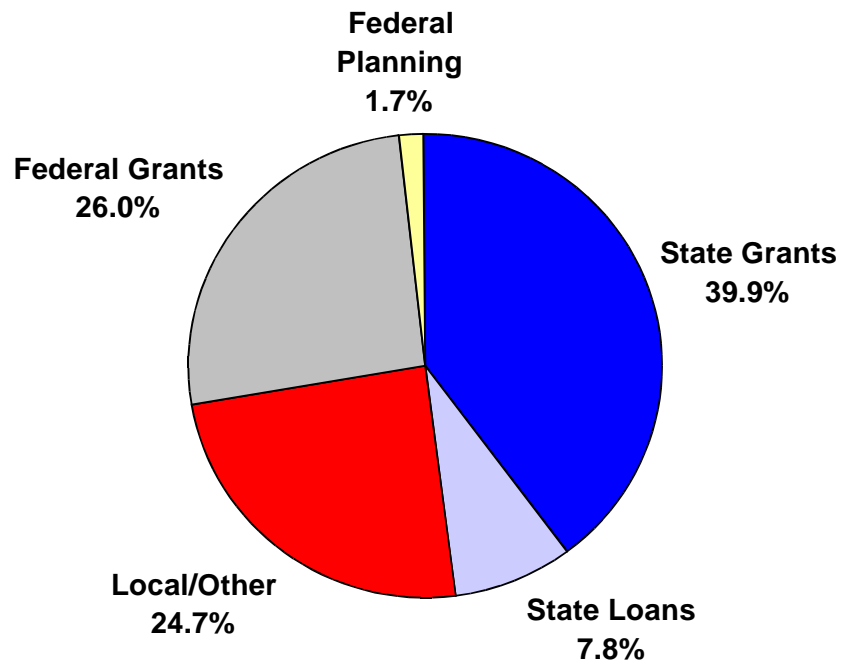
²⁹ State Programs for Light Density Rail Lines, 1976 - 1995, a report prepared by the Standing Committee on Rail Transportation of the American Association of State Highway and Transportation Officials, February 1997.

provide assistance for short line railroad infrastructure improvement projects (see Figure 12B).

Figure 12A

DISTRIBUTION OF RAIL ASSISTANCE FUNDING 1976 – 1995

Total Program = \$2.094 Billion



Source: *State Programs for Light Density Rail Lines, 1976 – 1995*³⁰.

³⁰ Ibid.

Figure 12B

Assistance Programs for State Short Line Railroads

State	Name of Program	Funds Available (\$ in millions)	Grant or Loan
Connecticut	70/30 Freight Program	\$0.5	Grant
Florida	Transportation Outreach Program	\$5.4	Grant
Georgia	Industrial Rail Access	\$0.4	Grant
Idaho	Rail Service Preservation	Currently Unfunded	Grant or Loan
Illinois	State Loan Fund	\$2.9	Loan
Indiana	Industrial Rail Service Fund	\$1.4	Loan
Iowa	Rail Assistance Program	\$8.3	Grant and Loan
Kansas	Rail Service Improvement Fund	\$3.0	Loan
Maine	Industrial Rail Access	\$2.0	Grant
Maryland	Transportation Trust Fund	\$1.6	Grant
Massachusetts	Industrial Rail Access	\$2.0	Grant
Michigan	Rail Loan Assistance	\$3.0	Loan
Minnesota	Rail Service Improvement	\$7.0	Grant and Loan
Mississippi	Railroad Revitalization Fund	\$1.0	Grant
Missouri	Rail Preservation Fund	\$2.4	Grant and Loan
Montana	Rail Service Assistance	\$0.7	Loan
Nebraska	Revolving Loan Fund	\$1.9	Loan
New Hampshire	Rail Line Revolving Loan	\$4.0	Loan
New Jersey	State Rail Assistance	\$1.3	Grant
New York	Industrial Rail Access	\$1.0	Grant
North Carolina	Rail Industrial Access	\$0.8	Grant
North Dakota	Freight Railroad Improvement	\$1.0	Loan
Ohio	Rail Development Program	\$6.5	Grant and Loan
Oklahoma	Railroad Maintenance Fund	\$1.0	Grant
Oregon	Economic Development Fund	\$4.5	Grant
Pennsylvania	Rail Freight Assistance Program	\$7.0	Grant
Tennessee	Transportation Equity Fund	\$3.5	Grant
Vermont	Rail Economic Enhancement	\$0.5	Grant
Virginia	Railroad Preservation Fund	\$2.5	Grant
	Rail Industrial Act Fund	\$2.0	Grant
Washington	Essential Rail Assistance	\$5.0	Grant
Wisconsin	Railroad Service Assistance	\$4.0	Loan
	Freight Infrastructure Improvement	\$4.0	Loan

TRAFFIC CONGESTION RELIEF PROGRAM

The Traffic Congestion Relief Program (TCRP) was enacted in June 2000. TCRP included \$60 million for improvements to the Northwestern Pacific Railroad, as part of the effort to reduce truck congestion by allowing bulk shipments and lumber products to return to the rails. TCRP provided \$39.4 million for track upgrades and long-term stabilization projects, \$4.1 million for environmental work, \$15.5 million for debt repayment, and \$1.0 million for administrative costs for the North Coast Rail Authority (NCRA).

In addition, TCRP provided \$150 million to the San Gabriel Valley Council of Governments to build grade separations along the Alameda Corridor East in Los Angeles County. The Cross Valley Rail Corridor Joint Powers Agency, made up of representatives of the cities of Huron, Lemoore and Visalia, received \$4 million in TCRP funds to improve the rail infrastructure along the San Joaquin Valley Railroad Huron Line in Fresno, Kings and Tulare Counties.

TCRP projects that received funding allocations are going forward including \$19.2 million for NCRA, \$61.5 for Alameda Corridor East, and \$4 million for the San Joaquin Valley Railroad Huron Line. However, since May 2003, all project allocation requests presented to the California Transportation Commission have been put on the pending projects list.

NORTHWESTERN PACIFIC RAILROAD

The Northwestern Pacific Railroad (NWP) provides a link between the North Coast and the San Francisco Bay Area. Construction through the rugged Eel River Canyon was completed in 1914, thus allowing for the movement of people and goods between Eureka and Tiburon/Sausalito with ferry connections to San Francisco. The NWP was jointly owned by the Atchison Topeka and Santa Fe (ATSF) and the Southern Pacific (SP) railroads. In 1929, the ATSF sold their interest in the NWP to the SP.

By 1980, SP had applied to the Interstate Commerce Commission (ICC) to abandon the NWP between Willits and Eureka. During 1983 ICC public hearings, numerous parties were opposed to the abandonment and the ICC denied SP's request. In 1984, SP sold the 172 mile section of the NWP from Willits to Eureka to a short line railroad operator and the Eureka Southern Railroad (ESR) was born. Undercapitalized and saddled with huge monthly loan payments, ESR filed for bankruptcy in late 1986. A federal bankruptcy Court determined the loss of the line would have a crucial impact on the North Coast economy and ruled that a trustee should be appointed to continue operating the railroad.

In 1989, the North Coast Rail Authority (NCRA) was created by the State Legislature to preserve and maintain a transportation corridor along the North Coast Region. The NCRA is a local agency made up of members from Humboldt, Mendocino and Sonoma Counties. On April 1, 1992, the NCRA purchased the ESR out of bankruptcy and renamed the Eureka to Willits line the North Coast Railroad.

The Northwestern Pacific Railroad Authority (NWPRRA) is a Joint Powers Agency composed of the Golden Gate Bridge, Highway and Transportation District (GGBD), Marin County and the NCRA. On April 30, 1996, the NWPRRA acquired the line between Lombard in Napa County and Healdsburg in Sonoma County. At the same time, the NCRA also purchased the Healdsburg to Willits segment, and the entire rail line was again renamed the Northwestern Pacific Railroad.

The NCRA and the NWPRRA are both working to restore rail services to the North Coast. The NCRA's primary objective is to preserve freight rail service. It oversees the freight railroad operations of the 306 mile long NWP from Arcata in Humboldt County to Lombard in Napa County. The NCRA is also interested in passenger excursion trains along this scenic line.

The NWPRRA is interested in operating a rapid transit system from the Tiburon/Sausalito Area to Healdsburg.

This railroad has a history of being plagued by high maintenance costs due to frequent flooding along the Eel River. North of Willits, the railroad has been out of service since February 1998 due to rail damage from the El Niño storms. The southern end of operations has seen sporadic operations since being shut down by the Federal Railroad Administration in November 1998 due to unsafe track conditions and the lack of operating grade crossing warning devices. Several construction projects have been completed south of Willits since 1998. In 2001, a freight operation ran for several months.

A capital needs assessment of the entire line was completed in August 2002. NCRA hired Willdan Associates and HNTB Companies to do the assessment. It estimated that it would take about \$40 million to improve and repair the entire railroad. This includes \$1,100,000 for environmental mitigation, \$13,800,000 for professional and technical services, \$6,320,000 for Willits to Schellville (south), \$13,650,000 for the Eel River Canyon and \$4,890,000 for the Eureka to South Fork (north).

In addition, NCRA commissioned a Financial and Economic Feasibility study that was completed in January of 2003 by Parsons Brinckerhoff. The market analysis concluded that the freight market potential along the NWP corridor is relatively flat but there could be opportunities for growth in the solid waste, aggregate and port-related marine industrial activities.

As discussed in the section above, TCRP funding has been delayed due to the State budget crisis. Because of this, NCRA now plans to reopen the south-end with Federal Emergency Management Administration and Governor's Office of Emergency Services Alternate project funds.

NCRA is committed to reopening the entire line (Schellville to Eureka) to rail operations. The upgrade of the rail line would range from FRA Class 1 to Class 3 standards where practical (based on cost, operational, maintenance, and environmental issues) and future long-term stabilization of the rail line through the canyon. The availability of funding is key to allowing this upgrading to go forward.

CHAPTER XIII

ENVIRONMENTAL REVIEW

INTRODUCTION

California is aggressively working at improving the State’s environment. Careful stewardship is necessary to continue these advances in the natural and human environment while providing the infrastructure necessary for a vibrant economy. Freight rail is an integral tool of commerce. The State Rail Plan provides a decision platform to consider the current rail conditions, identify associated environmental issues, and develop candidate responses.

Numerous elements contribute to the complex issue of providing a viable freight system and balancing environmental considerations. Some of these elements include the following facts:

- Urban areas have serious air quality problems.
- Rail corridors have been in place for well over a hundred years.
- Land uses have evolved and grown around these routes.
- Interstate commerce drives Class I railroad practices.
- Private railroads provide a public conveyance.
- Railroad rights-of-way (ROW) are generally privately held.
- Federal positions and responsibilities may preempt state actions.

For this overview, California’s Livable Communities objectives will be used for identifying issue areas for the State to consider and further analyze as the freight element of the State Rail Plan is implemented. This overview also provides a baseline understanding of the following environmental impacts of rail:

- Noise
- Vibration
- Highway-Rail Crossings
- Hazardous Material
- Air Quality

NOISE

The impacts of noise vary as a function of urban or rural settings, ambient background levels, sensitivity of the receptor, physical features of the surrounding landscape, noise sources, and the intensity and frequency of the noise event. Some noise sources are necessary; the FRA, as of August 2003, is preparing a final rule to assure the appropriate use of train horns for warnings at highway-rail grade crossings.

The Department adopted a series of thresholds beyond which noise abatement is required for highway related projects. Figure 13A presents the five noise abatement categories and a general description of typically associated activities.

Figure 13A

Noise Abatement Criteria (NAC) and Activity Categories³¹

Activity	NAC, Hourly A-Weighted Noise Level, dBA Leq (h)	Description of Activities
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 Exterior	Developed lands, properties, or activities not included in Categories A or B above.
D	--	Undeveloped lands
E	52 Interior	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

³¹ Traffic Noise Analysis Protocol, California Department of Transportation, October 1998

NOISE SOURCES

There are three sources of noise from rail operations³²:

- Propulsion or machinery noise
- Mechanical noise resulting from wheel/rail interaction
- Aerodynamic noise resulting from airflow moving past the train

Propulsion and mechanical noise account for the major noise sources in the operation of freight rail trains. At slower speeds, propulsion (engine, fan and braking noise) is the primary source of noise. Diesel-electric engines generate electricity that drives electric traction motors to power freight locomotives. There are large fans located near the top of the power unit to cool the engines. As train speed increases, mechanical and structural sources become the predominant noise source. Mechanical noise sources include wheel/track interaction and structural vibrations.

Figure 13B provides a general planning level understanding of the noise level generated by a mainline freight rail corridor typically carrying five to ten trains per day traveling between 30 and 40 mph. This is a weighted value between day and night values.

Figure 13B

Noise Exposure from Mainline Railroad³³

Distance from Railroad Lines (In Feet)	Noise Exposure Estimate (dBA) Ldn
10-29	75
30-59	70
60-119	65
120-239	60
240-499	55
500-799	50
800+	45

³² High-Speed Ground Transportation Noise and Vibration Impact Assessment, USDOT Federal Railroad Administration, December 1998

³³ Ibid.

FEDERAL PREEMPTION OF LOCAL HORN WHISTLE BANS

The sounding of locomotive horns for advance warning at public highway-rail crossings has been a standard practice for over a hundred years. To abate the impact of noise from operations and locomotive horn use, local communities have adopted speed limits and prohibitions on horn use. Whistle bans are currently controlled by California Public Utility Commission rules under California Law. Communities within three counties in California, (Los Angeles, Orange, and Sacramento) have passed such bans at 64 at-grade crossings.

A 1995 FRA study “Nationwide Study of Train Whistle Bans” found an 85 percent increase in the collision rate during ban hours. In 1994, Congress passed “The Swift Rail Development Act” requiring the sounding of horns upon approach of every public grade crossing. The Act and subsequent legislation allow exceptions. The FRA is currently in the formal Rulemaking process to require horns to be sounded on approach of every public highway-rail grade crossing. Specifics of the plan include:

- Horn level set at either 104 dB or 111 dB
- Length of time a horn is sounded would be limited
- Localities or states would be allowed to establish approved “quiet zones”

Impacted Population

Nationally, FRA estimates 365,000 persons may be impacted by increased noise exposure from the Swift Rail Development Act, with 151,000 severely impacted. Setting the maximum sound limit and directionality of a horn may temper this impact. However, the exception for quiet zones might relieve as many as 3 million of the 5.8 million persons currently affected by horn noise exposure nationally.

NOISE STANDARDS

The US Environmental Protection Administration (EPA)³⁴ standards for noise emission of Interstate Rail Carriers are dependent on equipment and operational conditions. Generally, the EPA sets at a distance of 30 meters, or 100 feet, an 87 dBA standard at any throttle setting except at idle. The idle standard is 70 dBA. Noise standards for rail cars moving at 45 miles per hour or less are set at 88 dBA and for movement over 45 mph are set at 93 dBA. The FRA is empowered to force a railroad to correct the noise defect or remove the equipment from service.³⁵

³⁴ 40 CFR 201 – Noise Emission Standards For Transportation Equipment; Interstate Rail Carrier

³⁵ 49 CRF 210 – Railroad Noise Emission Compliance Regulations

MITIGATION OF NOISE IMPACTS

Receptors can be shielded from the noise of a passing train by a number of tools including noise barriers and sound attenuators. Noise barriers do not generally mitigate aerodynamic noise because of the height of the sources. Noise mitigation measures focus on addressing noise at the source or along the path to the receptor. Source mitigation attempts to quiet vehicles, while path mitigation diverts or buffers the noise.

VIBRATIONS

In December 1998, in the *High-Speed Ground Transportation Noise and Vibration Impact Assessment*, the FRA concluded that, “Vibration can be perceptible and intrusive to building occupants and can cause secondary rattling of windows, items on shelves, and pictures hanging on walls. In addition, sound reradiated from vibrating room surfaces, referred to as ground-borne noise, often will be audible in the form of a low-frequency rumbling sound.”

Vibration is very similar to noise, in that its intensity is a function of the wave energy passing through a medium, in this case the earth. A vibration experience will usually be a ten-second event. The intensity of vibration will vary with operations, geologic conditions, proximity, structural design, and configuration.

Product designs that attempt to minimize vibrations include: resilient fasteners to attach rails to concrete track slabs (generally not used by freight rail), ballast mats, resiliently supported ties and floating slabs. Other solutions include heavier rail, thicker ballast, heavier ties, or resilient elements beneath the tracks. Wood ties do not transmit motion as readily as concrete ties. However, none of these mitigation measures have shown great success. More costly but also more effective solutions include building modifications, trenches, buffer zones, and operational changes.

AT-GRADE HIGHWAY/RAIL CROSSINGS

One of the most noticeable impacts of rail within a community is related to highway-rail grade crossings. The impacts are manifest in delays to highways, roadways, and pedestrian users, and in increased risk exposure for accidents. In 2001, there were 54 deaths and 49 injuries resulting from California public highway-rail crossing accidents.³⁶

³⁶ FRA Office of Safety Analysis Database, May, 2002

The California Public Utilities Commission (CPUC) has promulgated a series of General Orders establishing standards and regulations for highway-railroad grade crossing operations, warning devices, geometrics, construction and maintenance, railroad crossing occupancy, etc.

The CPUC works in conjunction with the Department to prioritize projects eligible for federal Section 130 funding for local at-grade crossing safety programs.

EXISTING CONDITIONS

According to the FRA, California has over 12,850 rail crossings of which 4,800 are private, 7,900 are public and 150 are pedestrian. The types of warning devices used at a particular crossing are a function of the amount of vehicular traffic coupled with the number of rail movements.

Most rail lines have been in existence for a hundred or more years. In most communities, land uses have grown up to and around the rail alignments. At-grade crossings present a difficult safety problem for the traveler, railroad, and community. The ideal public policy would have all crossings separated or closed, eliminating any at-grade conflicts. Considering local access and mobility impacts and the significant monetary cost, this is an unreasonable general policy. California has approximately 5,000 at-grade crossings with cross-bucks, the most rudimentary warning protection. Current funding streams do not allow for an aggressive response to these safety and community impact issues.

HIGHWAY-RAILROAD ACCIDENTS

California had 145 motor vehicle/rail incidents in 2001. Thirty-one of these resulted in at least one fatality with an additional thirty-nine injuries reported. The more severe casualties tended to occur on track with trains traveling at higher speeds. Thirty-one of the crossing incidents happened in Los Angeles County. Following Los Angeles County was San Bernardino County with 14 incidents, Fresno County with 11, Merced County with 10 and San Joaquin County with 9.

At-grade highway-rail incidents are problematic in all areas of the State, in both urban and rural settings. Ideally, mitigation actions should be taken to improve crossing safety devices, and when practical, the crossing should be grade-separated or closed.

The Alameda Corridor Project connects the two San Pedro Bay Ports with the UP and BNSF railheads close to downtown Los Angeles through a 20-mile fully grade separated corridor. It eliminated 200 at-grade crossings. The corridor passes mostly through south-central Los Angeles via a depressed (below grade) right-of-way, returning to the surface at the southern end of the corridor. Street traffic crosses the trench on bridges. In addition to reducing rail freight transit time between ports and downtown railhead, the Corridor eliminates grade crossings and their inherent dangers.

The State and a number of communities have also taken steps to utilize new and emerging technology to improve crossing safety and reduce crossing impacts. In Southern California, Intelligent Transportation Systems (ITS) technologies such as advanced vehicle sensors, four-quadrant gates, variable message signs, and wayside warning horns are being tested.

California Operation Lifesaver is a non-profit volunteer organization dedicated to eliminating death and injuries resulting from grade crossing collisions and other pedestrian and vehicular trespassing on railroad property. Most railroads operating in California and many related industries are members. California Operation Lifesaver is part of Operation Lifesaver, Incorporated, a national organization whose efforts focus on three main components: education to promote awareness of the hazards of crossing tracks, engineering for improved warning devices and signals, and enforcement of traffic regulations at grade crossings and along rail lines.

AIR QUALITY

The California Air Resources Board (ARB) directs California air quality programs. Established in 1967, the ARB is charged to attain and maintain healthy air quality, conduct research, and systematically address major causes of air pollution in 15 air basins and 58 counties. One of the means through which the ARB accomplishes this is through the monitoring of emissions standards.

There is a clear linkage between rail operations and air quality. As part of normal operations, trains produce pollutants, such as nitrogen oxides and carbon monoxide. In 2002, 4.9 percent of the total California statewide mobile emissions of nitrogen oxides (NO_x) and 7.5 percent of sulfur oxides (SO_x) were contributed by rail operations.

Through various emission standards and programs, there has been a significant reduction in pollution over the years. However, continued growth, physical conditions, and public health considerations demand continued diligence.

EMISSIONS CONTRIBUTIONS

In 1996, ARB conducted a statewide emission inventory³⁷ including stationary sources (e.g., utilities, industrial, waste disposal, cleaning, surface condition and petroleum production), area-wide sources (solvent evaporation, farming, construction and unpaved roads), mobile sources (on-road vehicles, aircraft, trains, ships and recreational vehicles), and natural (non-anthropogenic) sources (wildfires, windblown dust, and geogenic sources). Figure 13C illustrates the locomotive contribution to key emission categories.

³⁷ 2002 Emission Inventory, California Air Resources Board, Updated September 1, 2003

Total organic gases (TOG) include all hydrocarbons (HC). Reactive organic gases (ROG) include organic gases but exclude methane and a number of low molecular weight halogenated organics. CO is carbon monoxide. Particulate matter (PM) refers to small solid and liquid particles such as dust, sand, salt spray, and smoke. PM₁₀ is a subset of PM with particle sizes of an aerodynamic diameter of 10 micrometers or smaller.³⁸ In comparing locomotive total emissions to total truck emissions, truck contributions to statewide daily emissions are considerably higher. Normalizing this data through ton-miles transported provides a comparable emission value per efficiency between modes. On a ton-mile basis, locomotives generate from one-third to one-twelfth the emissions of heavy diesel trucks.

Figure 13C

**1996 Estimated Average Daily Emissions by Summary Category
Tons Per Day**

Source	TOG	ROG	CO	NO _x	SO _x	PM	PM ₁₀
Stationary	2,700	700	350	630	150	220	140
Area-wide	2,000	770	2,700	93	5.4	3,600	2,000
Mobile	1,900	1,700	15,000	2,600	100	120	110
Natural	130	53	580	8.7	-	94	82
Total	6,700	3,200	19,000	3,300	260	4,000	2,300
Trains	7.5	7.3	23	150	7.4	3.2	3.1
% Total Sources	0.1	0.2	0.1	4.5	2.8	0.1	0.1
% Mobile Sources	0.4	0.4	0.2	5.8	7.4	2.7	2.8
Diesel Truck	57	56	293	473	23	39	37
% Mobile Sources	3.0	3.3	2.0	18.2	23.0	32.5	33.6

As can be derived from Figure 13C, pollutants to which trains contribute the most are NO_x (4.5 percent of total emissions, 5.8 percent of mobility emissions) and SO_x (2.8 percent of total emissions and 7.4 percent of mobile emissions).

EMISSION STANDARDS FOR RAIL VEHICLES

Smoke emissions from newly manufactured and remanufactured diesel-powered locomotives and locomotive engines, which had previously been unregulated have been made subject to federal standards.³⁹ The standards become more rigorous over time and are set out in a step or tier standard.

The new standards result in nearly a two-thirds reduction in NO_x emissions and nearly half the HC and PM emissions nationwide. This equates to a 304,000 ton NO_x emission reduction in 2005, equivalent to removing nearly 20 million cars from the road. Because NO_x contributes to the reduction of ambient

³⁸ Ibid.

³⁹ Technical Highlights, Emission Factors for Locomotives, US EPA EPA420-F-97-051, December 1997

concentrations of secondary PM, the new standards result in a reduction of 12,000 tons per year of PM.⁴⁰

EPA estimates that the lifetime cost per locomotive will be approximately \$70,000 for the Tier 0 standards, \$186,000 for the Tier 1 standards and \$252,000 for Tier 2 standards. Lifetime cost components consist of initial equipment costs; remanufacturing costs; fuel economy costs; and certification, production line and in-use testing costs. The average annual cost of this program is estimated to be \$80 million. This would be about 0.2 percent of the total freight revenue for railroads in 1995. The average cost-effectiveness of the standards is expected to be about \$163 per ton of NO_x, PM and HC.⁴¹

Due to by the interstate nature of railroads, the EPA-adopted regulations preempt certain local and state requirements for controlling locomotive emissions.

Enforcement

The EPA rules established an enforcement regime including individual locomotive/engine certification, requirements for maintenance records for actions that might impact emission performance, and an annual fleet testing program to monitor the in-use emissions. Short line railroads are exempt from EPA locomotive emissions standards by virtue of being small businesses with less than 500 employees.

The California ARB entered into a memorandum of mutual understandings and agreements with BNSF and UP to establish the South Coast Locomotives Program. The agreement sets a series of fleet performance measures that will “result in 100 percent replacement with the lower-emitting locomotives over 5 years from 2005-2009.”⁴² This program further establishes an annual report regime for the railroads. If established objectives are not met, liquidated damages apply.

Additional statewide solutions/programs include alternative fuels, liquefied natural gas, electrification and conversion incentive programs.

⁴⁰ *ibid*

⁴¹ Regulatory Announcement – Final Emissions Standards for Locomotives, US EPA EPA420-F-97-048, December 1997

⁴² Memorandum of Mutual Understandings and Agreements, South Coast Locomotive Fleet Average Emission Program, July 2, 1998

CHAPTER XIV

NEW TECHNOLOGY

GLOBAL POSITIONING SYSTEM APPLICATIONS

Small, low-cost global positioning system (GPS) devices allow tracking of equipment and personnel with a great degree of precision. GPS is being adapted to transit use and is an integral part of positive train control systems (PTC) now being tested (see PTC discussion below). GPS technology can be used to monitor engines, work equipment, and service vehicles, and enable rapid dispatch of safety or maintenance vehicles to a specific location. For example, high-tech refrigerated boxcars equipped with GPS provide precise real-time location information. Along with a satellite communications system, these boxcars allow the railroad to remotely monitor and control their on-board refrigeration equipment.

POSITIVE TRAIN CONTROL

New technologies for tracking and controlling train movements are being tested by Class I carriers in association with the FRA, Association of American Railroads (AAR), Amtrak, and state transportation agencies. Nomenclature includes communications-based train control (CBTC), communications-based train management (CBTM), positive train separation (PTS), and positive train control (PTC). PTC seems to be a generic term most often employed to describe the developing technology.

PTC systems permit faster overall train operation with both closer headways and increased safety. PTC improves on today's Centralized Traffic Control (CTC) systems⁴³ by utilizing GPS technology to locate trains with much greater levels of precision. It can be supplemented by computer-aided dispatching to forecast optimal train movements.

Typical features of the various systems under development include:

- GPS tracking of train movements
- Wireless data transmission network
- On-board computers to receive and process data

⁴³ Centralized Traffic Control is a technology used on most main lines whereby track switches and signals are remotely controlled by dispatchers working in a centralized location. Train movements are governed by the signals, supplemented by radio instructions.

- Wayside equipment with track database⁴⁴
- Dispatch center monitoring and control equipment
- Links to grade crossing equipment

PTC systems have been tested by UP and BNSF. Amtrak and FRA are testing PTC on part of the Chicago-Detroit corridor, and the AAR and Illinois DOT will fund an installation between Chicago and Springfield. Amtrak is also installing a variation of PTC in the Northeast Corridor. Contracts have been issued for testing on CSX Transportation (CSX) and Norfolk Southern (NS).

Ultimately, FRA will need to develop updated rules that include these new train control systems. Testing of alternative systems will continue, but widespread application is not anticipated for several years. The promise of PTC as the “next generation” train control system is that it will enable increased capacity and speed over existing main traffic routes with high volumes, with a greater level of safety than provided by current systems. With on-board equipment that displays instructions to the engineer, PTC can be employed on non-signaled trackage. In California, PTC would be particularly applicable to the State’s many routes used by both freight and passenger trains, as well as to freight-only routes with volumes sufficient to justify the installation costs.

INFORMATION TECHNOLOGY APPLICATIONS

Information technology (IT) applications are being adapted by railroads to improve productivity of accounting and reporting functions and to provide better service to customers. Many of these applications have been around since the early part of the computer age. The challenge facing railroads today is to expand IT use to improve communication between carriers and modes and to enhance the ability of shippers to interact easily and rapidly via the internet.

Operating practices that benefit from IT applications are train dispatching, crew assignments, operations monitoring, equipment and facility maintenance records, and car tracking. Support functions include purchasing, personnel management and employment functions, invoicing and billing, and exchange of data between railroads that cooperate with interchange of equipment and run-through trains. Customer services include equipment tracing, switching requests, car supply and delivery forecasts, and marketing and pricing inquiries. The value of electronic access will become evident with growing competition between carriers and between modes and with the increasing desire of shippers for real-time responses to inquiries and needs.

⁴⁴ The track database includes allowable speeds and other restrictions affecting train operations in the immediate area. It reduces the need for on-board computers to maintain an extensive track database covering a much larger operating area.

One example of an IT application is the development of ways to expand congestion pricing or yield management to encourage use back-haul moves that would otherwise be empty. Previously, this kind of transportation marketing was often impractical before the widespread use of interrelated computer systems. All of these factors, as discussed above, will further the development of IT applications and encourage their use on railroads.

ELECTRONIC COMMERCE

Class I carriers have begun to partner with outside or affiliated internet companies to integrate many of the functions described above. Services being developed by such companies promise a greater degree of integration of both internal railroad functions and customer services, expanding the ease of use with a unified internet “face.” Integration of interline shipments is a goal, providing the customer with a single interface for dealing with all aspects of moving a commodity or product from one location to another over two or more carriers or modes.

The internet services have the ability to package the individual railroad computer and internet applications together with like services for other transportation modes. Railroad applications are likely to be implemented first, with later inclusion of other shipping modes. Ultimately, regional and short line carriers could become affiliated with one or more of these services in order to expand their own contact with their customers.

LOCOMOTIVE TECHNOLOGY

Diesel-electric engines are now manufactured using alternating current (AC), as opposed to direct current (DC) to drive traction motors. AC motors provide greater adhesion, and thus greater pulling power than comparable DC locomotives. About half of the new locomotives ordered in the past two years have newer AC technology. The AC share is expected to increase in the future, but a market for DC technology locomotives will remain, particularly for railroads that do not need the higher tractive capability that comes at a premium price. AC traction will reduce the number of locomotives necessary to power a train, although at somewhat higher cost per unit. Three AC coupled locomotives have the tractive effort of four DC coupled locomotives. AC locomotives are particularly suited to hauling heavy tonnage over grades at lower speeds. Test units appeared in the late 1980s, and full-scale production locomotives were available by 1993. AC technology also has been adapted to produce high horsepower locomotives for higher speed trains, allowing railroads to replace two 3,000 horsepower units with a single 6,000 horsepower AC unit.

AC traction motors generally are more efficient and reliable than DC motors primarily because of their greater adhesion. Adhesion is measured as the percent of a locomotive’s weight on the driving wheels that is converted into tractive

effort. The typical large DC locomotive attains about 30 percent adhesion on dry rails, while AC locomotives attain up to 38 percent adhesion in varied weather conditions. The upper limits of AC locomotive adhesion are still to be determined, but some engineers believe 50 percent is a practical number. The greater simplicity of AC traction motors reduces the potential for down time. AC traction motors have the ability to withstand higher thermal loads, and thus can operate a greater length of time under a heavy load before overheating.

ELECTRONIC BRAKING

For over a century, US railroads have used the air brake technology developed in the late 1870s. The system employs air pressure changes controlled from the locomotive and extending through a continuous air line running the length of the train, to apply and release the brakes on the individual cars. With the advance of electronics, several versions of electro-pneumatic braking systems have been developed and are currently being tested. Electronic braking uses electronic signals to control and operate brake valves simultaneously, whereas the standard system has a lag time as the air pressure changes sequentially throughout the train.

Use of the new technology has centered on unit trains, where all the cars have the new system. However, several systems under development can operate with electronically-equipped cars intermixed with cars having traditional air brakes, allowing for gradual replacement of braking systems on existing cars. Electronic braking has numerous advantages, including shorter stopping distances, reduced wheel wear, and fewer mechanically related train delays. The electronic approach also allows systems to incorporate diagnostic sensing and other reporting of train operating information. With over a million freight cars in interchange service today, it is estimated that it will take over 10 years before the entire car fleet can be equipped with this technology.

INCREASED CAR CAPACITY

Larger freight cars capable of carrying heavier loads are a technological improvement with mixed blessings. Larger cars have potential for transportation savings, but they also require heavier, better-engineered and maintained track and structures (bridges, trestles, etc.) to withstand the greater forces applied to the track. This is a particular problem for many short lines that have infrastructure that is unable to accommodate the heavier cars, as described previously.

Heavier-weight cars reduce car movements for the railroads that have the track structure able to handle them. There are indications that the industry is moving toward even greater weights per carload with cars capable of up to 315,000 pounds.

ROLLING STOCK IMPROVEMENTS

RoadRailer is an intermodal technology that allows highway trailers⁴⁵ to be moved in trains by placing the forward and rearward portions of the trailer onto freight car wheel units. The trailers can be moved over the road with their highway wheels attached, and at a rail head require only the highway tractor to position the trailer and engage or disengage the railroad wheel units. RoadRailer technology avoids the need for costly capital investments at intermodal facilities to lift and move containers between highway trailers and railroad flat cars. This is particularly advantageous for low volume operations or for starting up service at a yard whose location may later be changed (a fail-safe investment policy). Pioneered initially by Norfolk Southern with trains between the Midwest and the Southeast, this technology is now being used by many Class I railroads. Swift Transportation Company operates a RoadRailer train over BNSF's I-5 corridor between Los Angeles and Seattle.

SUMMARY

Nearly all of the technologies described above have productivity implications for both Class Is and short lines, dealing with means to make more effective use of labor, to improve maintenance methods, or to operate trains more efficiently over a constrained rail network. Several technologies promise improved levels of customer service or satisfaction, and a few will contribute to enhanced safety in railroad operations.

The table below summarizes expected benefits for each of these categories.

Figure 14A

New Technology Benefits

Technology	Productivity	Customer Service	Safety
Locomotive Remote Control	4		4
GPS Locating	4	4	4
Remote Control Switches	4		
New Train Control Systems	4		4
Information Technology	4	4	
Internet Commerce	4	4	
A-C Locomotives	4		
Electronic Brakes	4		2
Increased Car Size	4	4	
RoadRailers	4	4	

Key: Strong Benefit – 4, Moderate Benefit –2, Little or No Benefit – 0

⁴⁵ The trailers, while sized for highway operation, are specially designed and built with sufficient longitudinal strength to pull the weight of 75 to 100 similar trailers when mounted on railroad wheel sets.

CHAPTER XV

FUTURE NEEDS

In order to examine and address state policy as it relates to freight railroads, it is important to recognize the costs and revenues associated with providing freight rail service, including customer service, safety, environmental and community impact issues among others.

The two large Class I railroads, UP and BNSF, will continue to dominate the Western United States for the foreseeable future. The survival of the 30 short line railroads currently active in California is threatened by an aging infrastructure, and the inability to keep up with the much more powerful Class Is and their heavier cars.

Freight rail operations are deeply intertwined with intercity and commuter rail operations. This complicates policy making significantly, since public benefits are clearly impacted by any decisions affecting the freight railroads.

While Class I freight railroads receive benefits from infrastructure improvements designed to make passenger rail operations more efficient, short line railroads have no funding sources available to them to make the necessary infrastructure improvements to allow them to continue to serve rural communities.

Class I railroads re-invest in track and rolling stock in ways that sustain and improve their bottom line. The magnitude of their operations nationwide enables them to selectively invest on an as-needed basis. However, it is important to note that even Class Is have historically benefited directly and indirectly from state-funded capital investment projects predicated upon improving passenger rail services and highway-rail grade crossings. Recent examples are the track and signal improvements on California's three State supported intercity rail passenger corridors, the Alameda Corridor, and the Alameda Corridor East, a major grade crossing improvement program that is under construction. Continuous upgrades and improvements are a necessity if the rail freight system in California is to continue to run efficiently and safely.

The short line railroads provide a wide range of public benefits including providing service to California's agricultural and lumber industries in the more rural portions of the State. Other real or potential public benefits include improving highway corridor mobility, the environment and safety by provision of rail service as an option to trucking.

To what extent are the short line railways providing an economic benefit to regional and local economies? How can this benefit be measured? Short line railroads act as feeders to high volume main line rail routes owned by Class Is. In this instance, they are providing a direct benefit to the Class I railroads. They also provide a benefit to the shippers located along branch lines providing economical transportation and helping to retain businesses and jobs in California's rural regions. In several instances short lines have taken over where the Class Is no longer operate. Class I railroads move high volumes of freight, eliminating the need for many truck trips.

Another public benefit provided the freight railroads is increased modal choices. For example, if a short line railroad were to shut down its rail freight traffic would have to shift to trucks on roadways. Many adjacent local roads and highways are already congested. More trucks transporting goods means more highway congestion, highway deterioration, and more air pollution from increased diesel emissions. In addition, along with highway maintenance costs and increased air pollution, there are the social and economic costs of traffic accidents.

Freight railroads have the ability to take trucks off the State's highways. The Department has developed a model that can measure the benefits and costs involved in removing trucks from the highway. This model can provide the amount of dollar savings as a result of reduced highway maintenance, congestion, accidents and noise. A reduction in air pollutants can also be calculated and used as credits toward air quality attainment

A final question in relation to funding is, can investments be justified on the basis of safety? Since technology of railcars is heading towards larger and heavier cars, there is a significant need to upgrade the infrastructure for the track, bridges and turnouts. Without adequate infrastructure, railroads would be subject to frequent derailments that would threaten their economic reliability.